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JOURNEY OF CAREY AND DALGLEISH

IN

CHINESE TURKISTAN & NORTHERN TIBET

(MR. DALGLEISH'S ITINERARY);

AND

GENERAL PREJEVALSKY

ON THE OROGRAPHY OF NORTHERN TIBET.

WITH

INTRODUCTORY REMARKS

By Mr. E. DELMAR MORGAN.

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GENERAL PREJEVALSKY ON THE OROGRAPHY OF NORTHERN TIBET.

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INTRODUCTORY REMARKS.

By E. Delmar Morgan.

The following translation of the late General Prejevalsky's seventh chapter of his last work and the tabulated itinerary of Mr. Dalgleish (the companion of Carey) relate to a country of which our knowledge is as yet meagre and imperfect. While all that part of Central Asia generally known as Western Turkistan, comprising the region extending from the slopes of the Pamirs westward to the shores of the Aral and the Caspian, has been visited and explored within the last ten or twenty years by many travellers, the tract lying to the east of it—that is to say Eastern Turkistan, the basin of the Tarim, Lob-nor with its swamps and deserts, and Northern Tibet—has been visited by few. The remoteness of these regions, their inaccessibility, the great trials and privations which must be endured by those who would penetrate into them, the formidable physical obstacles to be overcome, the predatory instincts of the few scattered tribes inhabiting the mountainous parts, and lastly, Chinese-Tibetan exclusiveness, have all deterred explorers and travellers from penetrating thither.

Since the publication of the English version of Prejevalsky's first book, there have been but six expeditions in the same direction; of these, three organised by the Russian Geographical Society were led by Prejevalsky himself, one was undertaken by Pundit A. K. for the Government of India, a fifth by the Austrian Count Szechényi, while that by Messrs. Carey and Dalgleish completes the list. None of these travellers except A. K. succeeded in reaching Lhassa, the goal they had set themselves to attain, and this city remains at the present day more difficult of access than it was in the last century, when Manning, the friend of Charles Lamb, gave us the first account of its wonders.

But however unsuccessful in their main object these expeditions

may have been, in a geographical point of view they have at all events not been unfruitful. Those of Prejevalsky in particular have filled many blanks in our maps, and, extending our knowledge over remote regions, have reduced still further the terra incognita of Central Asia.

To him, indeed, we owe the rediscovery of Lob-nor and the tracing of the Tarim to its final discharge in that waterspread. He was the first of modern travellers to visit the sources of the great Yellow River of China, and delineate with some approach to accuracy the mountainous system of the Kuen Luen where this mighty range forms the outer barrier of Northern Tibet.

I propose in the following pages giving a brief outline of his last journey as far as the point where we take it up in detail. In the autumn of 1883 his expedition, composed of twenty-one men all told, mustered at Urga, and starting thence on the 8/20 November, made their way across the Gobi by the track which he had before followed several times. For nearly a month they advanced by slow marches across the wide belt of steppe and desert which, in the meridian of 105° E. long., intervenes between Siberia and Western China. The weather was fine, as it usually is in Mongolia in the autumn, and as they went south the temperature became warmer, frost and snow being left behind. Nor did they experience the violent winds which in spring and summer are so remarkable a feature of the desert of Gobi; on the other hand, they had ample opportunities of beholding those gorgeous atmospheric phenomena at sunset observed all over the eastern hemisphere towards the close of 1883, and attributable, it is generally believed, to the volcanic eruption of Krakatoa.

Having crossed that tract of shifting sand desert known as the Galpin Gobi, lying immediately beyond the Hurku hills and forming as it were a prelude to the yet more desolate region of Alashan, they encamped on the 3/15 January, 1884, in the vicinity of the town of Din-Yuan-ing, the residence of the Prince of Alashan. Here they were among old acquaintance, for Prejevalsky had in 1871 and 1873 received hospitality from this prince, and on his third journey he had twice visited the place. On this, his fifth visit, he records the presence of a European—a German, Grezel by name, the agent of an English company—who was engaged in buying wool, chiefly camel's hair, for export viâ Tientsin, and rhubarb obtained at Sining. Here, then, in this out-of-the-way corner of the world, has European commercial enterprise gained a footing, the merchant following closely upon the footsteps of the explorer. It is interesting too to learn that the country of Alashan, which had suffered greatly from the Dungan Muhammadan insurrection, now shows signs of recovering. The formerly deserted mountains, in which wild beasts multiplied, and where forests untouched by woodman's axe grew luxuriantly, had felt the effects of a long period of peace. The deer and the antelope, scared by the sportsman's gun, no longer yielded an

easy prey, and the luxuriant forest growth was rapidly being cleared by the industrious Chinese colonist.

Having employed a week in refitting, in buying fresh camels and provisions, the expedition set out once more by their old tried route through Southern Alashan to the borders of Kan-su. On their left rose the lofty wall-like Alashan range, on their right was the plain gradually sloping from the foot of the mountains, and for some distance at all events tolerably well covered with grass, a fact attributable by the Mongols to an unusually plentiful rainfall during the preceding summer. At Shanghin-dalai, memorable for their having nearly lost their way here in June 1873, they halted for one day, adding a new bird to their collection—named, after Monsieur Kozlof, one of Prejevalsky's companions, *Accentor Kozlowi*.

Leaving the high road to Lan-chau on their left, they revisited the spring of Baian-bulak, where they had hoped to have obtained astronomical observations, but were disappointed owing to the bad weather—thick clouds of dust, suspended in the air for days together, completely obscuring the sky. The path from Baian-bulak crosses a southern arm of the Tingeri shifting sands, winding over ridge and furrow. Fortunately, however, it was winter, and the frozen subsoil gave a secure footing to the camels. The wells here are dug through loess deposits to a depth of 100 to 180 feet; and it is related that when digging one of them the workmen came upon a hearth, built in the Mongol fashion of three stones, and ashes below it, buried under at least 130 feet of soil. This discovery so frightened the well-diggers that they abandoned their work; had they continued it positive evidence might have been forthcoming of the remarkable effect of the levelling process constantly at work here—for in these dry wind-swept countries the sandy marly deposits, whilst they obliterate every vestige of human labour, preserve it intact for future generations, just as the monuments now being exhumed in Upper Egypt are found to have lost none of their sharp outlines, though several thousand years have probably elapsed since they were first erected.

The southern limit of Alashan is the Nan-shan, the easternmost part of the Kuen Luen, that mighty system which, under various names and through 20 degrees of longitude, forms a bulwark to the highlands of Tibet. The exploration of the Nan-shan range was a chief feature of Prejevalsky's third expedition (1879–80), but we will now follow our traveller to the sources of the Hwang-ho, whither he proceeded after crossing the Burkhan Buddha range.

This river rises in the eastern slope of the Baian-kara-ula range, where it is known as the Altyn-gol, under which name it flows about 100 miles towards the north-east, receiving a number of small tributaries; it then crosses an extensive marshy tract upwards of 100 miles in circumference, fed by springs, and called by Mongols "Odon-tala,"

and by Chinese "Sing-su-hai," the former name signifying "Starry steppe," the latter "Starry sea"—names suggested by the numerous springs which here force their way to the surface, and appear, when seen from a height, like stars on the horizon. These springs unite their waters with the Altyn-gol, which then flows 30 miles to Lake Tsaring- (or Charing-) nor, and ten miles further on enters a second lake, Nioring- (or Oring-) nor (see supplementary note) whence it issues under the Mongol name of Khatun-gol, or Empress river (the Tangutans call it Ma-chu), and turns south and afterwards east along the southern foot of the lofty Amneh-Machin mountains. Having thus flowed upwards of 230 miles, and having been joined by a number of affluents, the Khatun-gol makes a wide elbow, turning towards the north-west, and again to the north-east to the Chinese frontier at Sining-fu, where it enters China Proper, and where for the first time, 800 miles from its sources, this river takes its Chinese name of Hwang-ho, or Yellow River, from the yellow colour of its loess-impregnated waters.

The above statement is derived from Chinese books;* let us see how Prejevalsky speaks of the same region. His expedition reached the eastern border of Odontala, known also by its Tangutan name of "Garmattin," or "Starry steppe," and found it to be tussocky marsh land, dotted with lakelets bearing evidence of having once formed the bed of an inland sea. The elevation was found to be 14,000 feet, a number of detached hills and groups of hills rising some 700 or 800 feet higher, those on the south being probably offshoots of the Baian-kara-ula, which divides the basin of the Hwang-ho from that of the Di-chu or Upper Yang-tsze-kiang, while those on the north, rarely 500 feet above the plain, form a crescent-shaped ridge of hills known as "Akta," about 30 miles long. Near these a detached mountain, "Urundushi," rears its head 16,500 feet above sea-level. The plateau itself extends southward as far as the descent into the alpine region of the Di-chu; eastward it embraces the lakes just spoken of; while on the west it probably rises a little, dividing the sources of the Hwang-ho from the rivers of Tsaidam. The springs and brooks of Odontala unite in two principal streams, meeting in 34° 55′ N. lat. and 96° 52′ E. long., to form the Salomà, a name given by the Mongols to the head stream of the Hwang-ho. It is exactly here, at the meeting of the waters, that there stands a lofty hill, 700 to 800 feet above the plain, forming the angle of a ridge extending eastward to Lake Charing. On its summit an "obo" or cairn has been erected, and here yearly sacrifices are offered to the tutelary spirits of the "great" river. For this purpose an official of high rank leaves Sining with a numerous retinue of Mongol princes, or their representatives. A large concourse of Mongols and Tibetans

* In 1280 Khublai Khan despatched one of his high officers to explore the sources of the Hwang-ho. See Bretschneider's 'Mediæval Researches from Eastern Asiatic Sources,' vol. ii. p. 209.

meet them, and all together they ascend the hill. Arrived at the "obo" a prayer, written on yellow paper and signed by the Emperor of China himself, is read aloud, invoking the aid of the deities that there may be an abundance of water to satisfy the needs of millions of Chinese. Sacrifices are then offered up, the slaughtered animals, all pure white, being afterwards distributed among those present, who feast upon them.

The great lakes at the sources of the Yellow River are correctly laid down on d'Anville's atlas of China, precisely in the position assigned to them by Prejevalsky, who has merely rediscovered them and added topographical details, changing their names from "Charing" and "Oring" to "Russian" and "Expedition" lakes. Fed by the springs of Odontala—which reach them, as already said, by the Salomà river and two large streams from the north—these lakes have each a circumference of about 85 miles; their form is ellipsoidal, the longer axis of the one being from east to west, while that of the other is from north to south. Their water is perfectly sweet, the temperature varying at the end of July from 50° to 63° Fahr. Their importance to China must be enormous, regulating as they do the water supply of its northern plains. Though abundantly supplied with water, it is remarkable that, according to Prejevalsky's observations, these lakes, like many others of Inner Asia, are undergoing a constant process of diminution, traces of former shore marks having been seen at some height above the present level, while the lakelets along the shores give evidence of having been formerly united in a waterspread much larger than the present one.

The Yellow River enters Lake Charing or Expedition from the west, and issuing from its south-eastern extremity, cleaves a passage through the intervening isthmus of high land to Oring or Russian lake. From the north-east end of this latter it flows eastward as the Ma-chu of the Tibetans; then describing a wide bend, though probably less wide than that represented on maps, in order to avoid the snowy Amneh-Machin range, it bursts through the opposing chains of the Kuen Luen on its way towards China Proper. Between Lake Oring and the mouth of the Churmyn * the Hwang-ho falls 4000 feet in 270 miles, probably forming rapids and cataracts in this unexplored part of its course.

It was near here that Prejevalsky had his first hostile encounter with one of those predatory tribes the terror of peaceful caravans in this region.† The attack, though delivered at night, failed, and the discomfited Tangutans retired with the loss of several killed and wounded.

To commemorate his victory over a force vastly superior in numbers

* The mouth of the Churmyn was reached by Prejevalsky during his third expedition while exploring the Upper Hwang-ho. This was in fact his farthest point, for though his Cossacks reconnoitred 40 versts farther up the Hwang-ho, which here flows in a deep canon 1600 feet below the level of the plateau, they could find no ford by which this river might be crossed, and the mountainous nature of the country to the south presented formidable obstacles to an advance.

† Cf. 'Report on the Explorations of A. K.,' p. 33.

to his own, and armed with guns and other offensive weapons, Prejevalsky named the river debouching into Lake Oring from the south, "Robbers' river"; he then pushed on to the Di-chu (Upper Yang-tsze-kiang), and struck it at the mouth of its tributary the Kong-chiung-chu, 270 miles below the spot where he had crossed it in 1879 when following the pilgrims' road towards Lhassa. He found it here a deep and rapid river enclosed in mountains, about 120 yards wide, with water of a dirty yellow colour, and a temperature at the end of June averaging between 48° and 55° Fahr. Immediately after rain it rises three to four feet. Its general direction is from W.N.W. to E.S.E., and its channel is exceedingly tortuous. Seven days' march higher up, where the Napchitai-ulan-murren flows into it, the Di-chu divides into seven channels, and is fordable at low water. This ford, known by the name of Chamar-abdan, is the only one in this part of the river; the level of the Di-chu at the mouth of the Kong-chiung-chu is 13,100 feet above the sea, but at Chamar Abdan, where the caravan track crosses it, the height is 14,600 feet, a difference in level of 1500 feet in about 270 miles, exclusive of windings, or 5·5 feet per mile. 330 miles lower, at Batang, where this river is known as the Kin-sha-kiang, its height is 8150 feet, a fall of nearly 5000 feet, or 15·15 feet per mile excluding the windings.

Except at the fords the Di-chu can only be crossed in boats—these are of the most primitive construction—merely yak skins stretched over a clumsy wooden framework. Men and small animals, such as sheep, may be ferried across in this way, while horses and yaks generally swim. With camels it would be hopeless to attempt the passage, for, even if they succeeded in reaching the opposite bank, they would be unfit for travel in the mountainous country beyond. Prejevalsky, therefore, decided on turning back and exploring more fully than he had yet done the watershed lying between the Di-chu and the sources of the Hwang-ho (see supplementary note, p. 86).

He found the valleys 13,000 to 13,500 feet, and the passes ranging up to 16,000 feet. The climate is humid and chilly, continual rain, varied by hail, snow and thunderstorms converting mountain and valley into a succession of impassable swamps. Very different is the region bordering on Tsaidam, where the excess of humidity is absorbed by the dry dust-laden winds of the plains, and where lakes and rivers disappear, leaving behind them layers of salt often several feet thick.

With his return to Tsaidam began what Prejevalsky terms the second period of his expedition. He had explored the north-eastern angle of Tibet, and now turned north-west in order to reconnoitre a road said by the Mongols to have been formerly used by merchants from Sining to Lob-nor. This led along the southern border of Tsaidam, at the foot of mountains buttressing the high lands of Tibet.

Tsaidam,* a depression forming in ages past the bed of a great lake,

* The Saithang of A. K.'s report and map.

and now lying 9000 feet above sea-level, extends from east to west for 270 miles, and from north to south for 70 miles, while for administrative purposes it comprises a much wider extent of country. The whole of this expanse is a *salina*, or salt swamp, receiving the drainage of the streams from the bordering ranges. Most of these disappear in the ground on issuing from the mountains, but three of the more important, the Baian-gol,* the Naidjin-gol (the Naichi of Dalgleish's itinerary), and the Utu-murren (Dalgleish's Otto-Mairin-gol), flow for a considerable distance into the salina, and according to the latest native information, unite their waters there in one large lake—Dabasun-nor, which increases and diminishes in size according to the season of the year, while in winter its salinity prevents its freezing.

Such scanty vegetation as Tsaidam possesses is due to the subterranean water forcing itself to the surface and nourishing tamarisk and other allied plants along a belt some ten to twelve miles wide at the foot of the mountains; beyond this are bare impassable salt-marshes.

Darwin, in his 'Journal of the Voyage of the *Beagle*,'† finds a remarkable similarity between the salt lakes in Siberia and Patagonia; the comparison might also hold good for the region in question, though Prejevalsky does not mention crustacea, such as those Darwin describes crawling among the crystals of sulphate of soda or lime.

Hiring a Mongol guide Prejevalsky set out for the Naidjin-gol, which he reached after nine days' march through a country dreary in the extreme—a brown expanse of plain, only occasionally relieved by vegetation, and varied by tracts of pure white salt, nearly all the springs being brackish. The tracks are well beaten, but the number of side paths leading to the nomad encampments make it impossible to keep in the right road without a guide. No inhabitants could be seen, they having lately fled for fear of robbers, who usually select the autumn for their depredations. The soil here was clay as hard as stone.

From the Naidjin-gol where Prejevalsky observed the migrations of birds, he continued his journey to the Utu-murren and thence to Gass, where he established a depot before starting on his winter excursion, his chief object being the elucidation of the orography of Northern Tibet, for having in his recent journeys crossed several ranges of mountains farther east—e.g. the Nan-shan, the Burkhan-Buddha, the Shuga, the Baian-kara-ula, the Koko-shili, the Dumbure, and the Tang-la—and found them to run approximately in an east and west direction, Prejevalsky was now anxious to trace their westerly continuations, and define, if possible, their connection with the Kuen-Luen.

In the chapter now translated he has sketched in outline the topographical features of the country, leaving to future explorers to fill in the details and to continue his work till we have a complete relief map of

* According to Mr. Rockhill, the Yohuré-gol, 'Proc. R.G.S.,' 1889, p. 731.—M.

† Cf. 'A Naturalist's Voyage,' &c., ed. 1888, p. 88.

Northern Tibet. Much uncertainty still prevails as to the physical features of this country. For several hundreds of miles the courses of its principal rivers are yet unexplored, large lakes yet unvisited, and we learn from Prejevalsky and Dalgleish of grand snowy mountain ranges, where we had formerly supposed a vast undulating plateau.* The discovery and survey of the high Valley of the Winds, and the various questions connected with it, are not the least interesting parts of Prejevalsky's narrative, while his description of the clay hills among which he found himself south of Unfreezing Lake recalls to mind very similar features in the Rocky Mountains described in the Reports of the United States exploring expeditions by Powell and Clarence King (cf. their reports).

The itinerary of Mr. Dalgleish, the companion of Carey, relates to much of the same country as that traversed by Prejevalsky, and although his diary is merely a daily record of what he saw and heard, it is, nevertheless, a valuable contribution towards our knowledge of those regions visited by so few Englishmen. Mr. Dalgleish joined Mr. Carey as paid assistant, but his services appear to have been beyond any money value, for besides having charge of the general management of the expedition and interpreting, he contributed the route survey and astronomical observations for the map accompanying these pages. His services are handsomely acknowledged by Mr. Carey in the paper printed in our 'Proceedings,'† and in referring to them again we have only to express our deep regret that an untimely death at the hands of robbers on the Kara-korum Pass should have cut short the career of one who was in every way so well fitted to lend assistance in any scheme for the exploration of the Trans-Himalayan territory.

I have divided his itinerary into five sections, corresponding with the breaks made in the journey and the nature of the country traversed. Section I. takes us from Leh, his starting point, to Khotan in Chinese Turkistan, a distance of 508½ geographical miles (585 English statute miles). The route which had been previously surveyed by Pundit Kishen Singh, under the orders of Captain (now Colonel) H. Trotter (Cf. Route XIV. in 'Report of Forsyth's Mission to Yarkand'), leads past the northern end of Pangong Lake and crosses the Marsinik,‡ or Lunkar-la Pass, into the Changchenmo valley. Leaving this valley shortly after the Shahidulla road turns off to the left, it ascends to the plateau by a small pass (the Salmu Kongka); descending again into the valley and crossing the Changchenmo stream. Another ascent leads up the Lanak-la Pass, and the route now lies in independent Tibet. Three marches farther bring the traveller in view of the large salt lake of

* Cf. 'Explorations in Great Tibet and Mongolia, by A. K.,' p. 14.

† See 'Proceedings R.G.S.,' 1887, p. 752.

‡ 18,990 feet according to Johnson. See his journey to Ilchi, Khotan. 'Journal R.G.S.,' vol. xxxvii. p. 24.

Mang-tso, and five miles beyond is the fresh-water lake of Tashlik-kul, nearly 17,000 feet above sea-level. Hence a series of ascents and descents have to be made before the well-situated camp of Tak-nak or Dak-nak is reached and some needful repose is obtained for man and beast, both somewhat exhausted after the severe strain of marching at these great altitudes over red clayey ground softened by snow.

About 23 miles beyond Tak-nak the brackish lake Yeshil-kul is reached, and the head of the Keria river. Here lies the boundary of Khotan territory and the watershed of the trunk range of the Kuen Luen, whose peaks stand out grand and snowy on the west. So far the country is uninhabited, and it is only at Ghubolik, two marches further, also 17,000 feet high, that the first traces of human beings are seen in the stone huts erected here by the miners who come from Khotan to obtain sulphur excavated in large quantities from the ground near Ulugh-shah in the Ghubolik plain. Twelve miles from Ghubolik the descent begins, at first down a steep and stony ravine, then by a second ravine following the Polu stream to the small village of the same name. This most difficult part of the journey is quite impracticable for baggage animals. The track descends 9000 feet in 28 miles, and in places lies along a narrow gorge obstructed by huge boulders. Prejevalsky attempted the ascent of this gorge from Polu for several miles, but gave it up in despair, and Messrs. Carey and Dalgleish only succeeded in descending by unloading their ponies and carrying their baggage over the worst parts.

This route, however, was not always in so bad a state. According to Prejevalsky, it underwent repairs in 1877, when Niaz Beg, Governor of Khotan, prepared to escape this way into India upon the downfall of his master, the late Amir of Kashgar, and it is hinted that the Chinese had intentionally blocked the passage. When once the difficulties in the gorge of the Kurab or river of Polu are surmounted, the route over the series of high plateaus crossed here and there by low ridges presents great advantages to the traveller who is not pressed for time, and in summer may be traversed without once entering the limits of perpetual snow,* the snowstorms experienced by Messrs. Carey and Dalgleish in August having been quite unusual. Having dismissed their pony caravan at Polu they descended to Keria, an oasis in the Khotan district, where they made a nine days' halt. They were now in a well-cultivated country, where corn, fruit, and vegetables were plentiful and good.

The first European to visit Keria in modern times was Mr. Johnson, civil assistant in the great trigonometrical survey of India.† He paid a hurried visit there from Khotan in 1864, shortly after the Muhammadan population had massacred the Chinese in all those parts. He speaks of the gold of Keria (or Kiria) and of its commerce with Kabul and Kashmir. Prejevalsky estimates the inhabitants of Keria at 3000 families, morally

* Cf. 'Report of a Mission to Yarkand,' p. 248.

† Cf. 'Journal R. G. S.,' vol. xxxvii., pp. 1–47.

degraded by their gold traffic, and terribly diseased. He found Russian manufactured goods offered for sale in the bazaar, and a new town springing up 12 miles lower down the Keria-daria, where there was an oasis capable of supporting 5000 to 6000 families. Six stages (101½ miles) west of Keria is Khotan, reached by an excellent road passing halfway the large village of Chira.

The history of Khotan, dating back to the early centuries of our era, has been written by at least two authors, Rémusat and Klaproth. Its district has always been famed for jade (green, white, and black), musk, and silk, and these continue at the present day to be the principal articles of its commerce. When the Arabs, under the brave Kuteibe, in the early part of the eighth century advanced into Eastern Turkistan, they never went so far east as Khotan, and in Marco Polo's time it was subject to the great Khan. Johnson saw the place under the rule of an independent khan, who was trying, by flogging and other brutalities, to reform the morals of its inhabitants. This potentate was murdered by order of the Amir, Yakub Khan of Kashgaria, whose short-lived rule was replaced by the Chinese. The Khotanis,* however, estimated by Prejevalsky at 300,000, are apparently as dissatisfied now with Chinese rule and as ready to become Russian subjects as they were in Johnson's time anxious to place themselves under the British Government.

Despotism and barbarism have seen their day in Central Asia, and whether it come from the north or the south, civilisation will confer priceless blessings on the unfortunate inhabitants of Eastern Turkistan. For the present, isolated from Russia on the one side and from British India on the other by huge mountain ranges, the Khotanis are fain to submit to China, though separated from her by wide expanses of desert and burning sands.

From Khotan northwards Mr. Dalgleish's itinerary (Section II.) takes us over new ground, where he and Carey, preceded only a few days before by Prejevalsky, travelled along the Khotan-daria to the Tarim, and along this last-named river to Korla and Loh-nor. Their route, which had been mentioned in Forsyth's Report (Route XXIII.) lay at first down the Yurung-kash (white jade) to its confluence with the Kara-kash (black jade), and from their fork at Kosh-lush down the Khotan-daria. Stretches of cultivated land, with a few settlements—the largest of these is Tawakal (Prejevalsky's Tavek-Kehl)—border the Yurung-kash for the first forty miles after leaving Khotan; beyond this there are no inhabitants, except an occasional shepherd, and vegetation is confined to a belt of shrubbery, jungle grass, and poplar trees. The road winds along either bank, and is excellent; grass and fuel are abundant, this being in fact a highway of commerce between Aksu and Khotan. In autumn and winter caravans of merchandise pass along it, but in summer the heat is overpowering, and the number of flies and

* Prejevalsky calls them "Machinians" in his last work.

insects make it intolerable for man and beast. Even the wild animals which haunt the belt of jungles seek refuge in the desert at this season from their tormentors. The course of the Khotan-daria, as already said, is due north 170 miles to the Tarim, with a fall of 4½ feet per mile; water, however, is very scarce in its channel, except in summer, when the snows melt and rain falls in the Kuen Luen near its sources. For the first 35 miles from Kosh-lush to the Mazar-tagh range, the stream is 40 to 70 feet wide and about 6 inches deep, the land subject to inundation extending for a mile or more on either side. Beyond the Mazar-tagh this stream continually diminishes, and at length altogether disappears some 90 miles before reaching the Tarim.

We learn from Prejevalsky that the large lake, "Yeshil-kul," represented on former maps to the west of the Upper Khotan-daria, has no existence at the present day, the environs of the river being nothing but sand wastes, hiding cities and oases deep down below the yellow surface. Sand, the enemy of man and vegetation in this region, effaces every vestige of flourishing cities, steadily encroaches on the oases, gradually desiccating wide tracts, and proving to man how small are his powers of contending with Nature. The area between Khotan, Ak-su and Lob-nor once contained 23 towns and 360 villages, of which not a trace is left, and it is said you might formerly pass along the roofs of the houses from Kucha to Lob-nor, where hardly a human habitation is to be seen. To this day the inhabitants of the few remaining oases sally forth in winter to seek for hidden treasure, tying bright-coloured rags to the ends of poles which they set up on the higher ground to enable them to find their way back.

The discovery of the Mazar-tagh range, so named after the shrine or shrines* perched on its summit, with its two red and white parallel ridges, standing about 500 feet above the sandy plain, is a geographical novelty, for it does not appear on existing maps. Prjevalsky says the southernmost of the two ridges is of red clay interstratified with gypsum, the northernmost of white alabaster, and that flints are obtained here and taken to Khotan for sale. This barren range of hills extends in a west by north direction to Maralbashi, where it dies away in the plains. Seventeen miles below Mazar-tagh the Khotan-daria loses itself, and its desiccated bed affords excellent marching ground for the caravan as far as the Tarim, the ferry across which is reached in eighteen stages from Khotan. Here Messrs. Carey and Dalgleish rested in order to procure supplies from Karatal on the Aksu road. Prejevalsky went on direct to Aksu, whence he returned to Russia viâ the Bedel pass over the Tian Shan.

The further route of Messrs. Carey and Dalgleish down the Tarim

* From Mazar, a shrine. Dalgleish only speaks of one, Prejevalsky says there are two—an old and a new one; the latter erected by the late Yakub Khan, whose work has been destroyed by the Chinese.

to Shah yar, thence to Kucha on the high road to Turfan and Hami, back to Shah yar, then to Korla, Karashahr and Lob-nor, has been treated of elsewhere, and may therefore be omitted from these papers.

I will now make a few remarks on the region described in the accompanying translation. Its topographical features give an idea of the physical characteristics, but more detailed scientific observations are necessary before we can do more than speculate on the structure of the underlying rocks, and explain the agencies and conditions which have helped to produce them. The few facts brought to our notice relate to the climate, drainage, and vegetation, the elevation and general aridity of this tract.

A wide expanse of territory, unaffected by the south-west monsoon, extends from the Kerian Mountains on the west to those bordering Kan-su on the east. Between these limits lies a mountainous mass of great elevation diversified by plateaus, plains, and valleys, large salt lakes and swamps. In addition to these are curiously shaped hills or mounds, from 300 to 500 feet high, covered with loess interstratified with harder beds, having dome-shaped summits, sides often vertical, and occasionally terraced or buttressed, bare of vegetation, and taking various shapes, such as castles, bridges, galleries, &c.

In the arid region of the western portion of the United States there are certain tracts of country which have received the name of *Mauvaises terres* or Bad Lands, having features very similar to those I have just mentioned. We learn from the reports of the U.S. geological survey explorations that it is a labour of no inconsiderable magnitude to penetrate or cross such a district. The Tibetan "Bad Lands" are equally impassable; Prejevalsky was obliged to retrace his steps when he found himself among them, while Messrs. Carey and Dalgleish were also unable to advance. To the southward there is apparently a great extent of snowy mountains. "A perfect sea of mountains," remarks Dalgleish, was disclosed to view in this direction (cf. p. 36), while to the north is Prejevalsky's longitudinal Valley of the Winds and his great salt "Unfreezing" Lake (Dalgleish's Chong-Kum-Kul). Lateral valleys with sides more or less perpendicular cut through the bordering ridges.

Continuing our comparison we find Northern Tibet, with its base-level of 12,000 to 13,000 feet, much higher than Colorado, where the maximum elevation of the ranges is little over 9000 feet. Nor has the former region any great river with tributaries flowing through deep cañons, which are so distinctive a feature of the latter. Tibet between 34° and 40° of north latitude has but few permanent streams, the drainage disappearing through the porous soil. Where shallow rivers are formed these quickly disappear on leaving the foot of the mountains, while the wet weather torrents are dry during the greater part of the year. Erosion here is mainly dependent on winds, those active aerial agencies which disintegrate and crumble the hardest rocks, producing

effects noticeable on every cliff and crag, and at the same time raising clouds of fine dust which obscure earth and sky. This fine dust or loess is deposited again on the surface, serving to round the outlines of hills and level the inequalities of plain and valley. The whole country presents a singularly desolate aspect, except during the short season of rains, and at spots where moisture is supplied by underground springs.

The peaks, tables, and valleys have an easterly and westerly direction, forming a succession of steps north of Tibet. In the absence of any precise knowledge of the geology of this country, we may assume that the limestone and schists were formed under the sea, and were spread horizontally to a great thickness over a broad expanse. With the upheaval of the crust of the earth these strata gradually emerged and rose to form ridges and masses of mountains where folds or wrinkles took place. The absence of rivers preserves the continuity of the whole mass, for the district being comparatively rainless, no clouds collect to form mountains, and it is only as exceptions and at wide intervals that a few groups of peaks, such as Jing-ri, Shapka Monomakh, and Kremlin, stand forth like solitary giants keeping watch over these solitudes. Had there been a greater precipitation of moisture there would have resulted a different class of topographical features. Instead of plains and plateaus we should have had rivers and ravines; instead of elevated valleys with dry watercourses there would have been deep valleys bounded by hills and slopes, and nature would have assumed a different aspect.

JOURNEY OF CAREY AND DALGLEISH

IN

CHINESE TURKISTAN AND NORTHERN TIBET

IN 1885–7.*

MR. DALGLEISH'S ITINERARY.

CONDENSED AND TABULATED BY E. DELMAR MORGAN.

The following tabulated itinerary is divided into five sections, according to the breaks made by the travellers in their journey, viz.:—Section 1—from Leh to Khotan; Section 2, from Khotan to Korla and Karashahr; Section 3, from Korla to Chaklik, including excursion to Lakes Kara-buran and Lob-nor; Section 4, from Chaklik into Northern Tibet, including visit to Hoiduthara, and return to Sha-chau; Section 5, Sha-chau to Aksu, including visit to Urumtsi.

Alternative spellings of names of places are placed in brackets.

* Vide 'Proceedings R.G.S.,' 1887, p. 752.

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SECTION I.

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
Aug. 1	Leh	Rumbirpur .. (1st stage)	..	12½	Easy march along Indus valley.
„ 2	Rumbirpur ..	Sakti .. .. (2nd stage)	..	14	Road here and there indifferent; 5 miles of pathways in northerly direction, through cultivation, to village and monastery of Chimra, then 1½ mile east to village of Sakti.
„ 3	Sakti	Durgu .. .. (3rd stage)	17,600 (height of pass)	20	Steep ascent to Zingral, where road forks to Chang-la and Kay-la passes. After crossing the former, gradually descend 4 miles to Tsultak. Down valley for 7½ miles. Over shoulder of hill to Tankse valley. Large stream running from south.
„ 4	Durgu	Tankse .. (4th stage)	..	6	Cross by wooden bridge; easy road; large village; good camping ground. Eight days' delay here owing to bad condition of ponies.
„ 12	Tankse ..	Mughili .. (Muglib*) (5th stage)	..	9	A very small village; cultivation scanty; valley a grassy swamp for 3 miles.
„ 13	Mughili .. (Muglib)	Chagra .. (6th stage)	..	13¾	Pass small villages Lukong and Pobrung. At 8th mile the Pangong lake is passed. Grass and wood plentiful. Road fairly good; gentle ascent all the way.
„ 14	Chagra ..	Lungkar .. (Lunkur*) (7th stage)	..	6	Steep ascent for first half-mile; afterwards gradual ascent to camp. Ovis ammon and wild asses seen.
„ 15	Lungkar .. (Lunkur)	Pomlung .. (8th stage)	18,400 (height of pass)	9¾	Marsinik (Lungkar-la) pass. Gradual ascent and good road to 400 yards of top of pass; last part steep and stony; descent into broad valley. Camp Rimdi passed at 17,500 feet. Good camping ground. Ruins of Tartar house.
„ 16	Pomlung ..	Pamzal .. (9th stage)	..	7	For 50 yards road overhangs cliff; stony gorge or cleft 60 yards. Descent to Changchenmo valley. Fuel and grass plentiful.
„ 17	Pamzal ..	Kyam .. .. (10th stage)	..	8½	Stream running north past Gogra joins Changchenmo valley.
„ 18	Halt at Kyam one day.		..	..	Shahidulla route, viâ Lingzi Tang, passed at the 4½th mile.

* Cf. Capt. Biddulph's route from Leh to Shahidulla by the Changchenmo Valley (Forsyth's Report, section 9, route iii).

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
Aug. 19	Kyam	Camp Zalung (11th stage)	..	13	Road leaves Changchenmo valley; gradual ascent of Salmu Kongka or small pass; enters plateau with grass, wood, and water; descent through narrow valley into broad valley running nearly east and west; at 7th mile strike Changchenmo stream. Camping ground fairly good, but grass scarce. Gradual ascent nearly all the march. Road excellent. Antelope, wild asses, and traces of yak seen.
„ 20	Zalung ..	Camp Lanak (12th stage)	..	12	Up broad valley to foot of pass; cross bed of Changchenmo stream. Excellent road; fair camping ground; more antelope seen.
„ 21	Lanak	Camp Democho (13th stage)	..	13	Gentle ascent to head of Lanak-la pass. From top of pass slight descent into valley with wood, water, and a little grass. At 5th mile a grassy swamp crossed. Good camping ground; grass, wood, and water rather scanty. Route now lies in independent Tibet.
„ 22	Democho ..	Topomóru camp (14th stage)	..	10	Continue down ravine skirting low hills. At 3rd mile enter broad plain, and continue along it for 7 miles to camp, crossing stream just before Topomóru. Low undulating hills on north side of plain, but on south side a dark bold range of mountains capped with snow. Road excellent, with very gradual descent nearly all the march. Camping ground good; more large game seen, including one wild yak.
„ 23	Topomóru ..	Kumdong camp (15th stage)	..	11	Continue along level plain, crossing two small streams at 2nd and 5½th mile. Road excellent all the way, camping ground good; fuel, grass, and water plentiful.
„ 24	Kumdong ..	Simmo-kur-kur camp. (16th stage)	..	6½	On leaving Kumdong, road turns S.E. for ¼ mile and crosses small stream, then N.E. by E. for 1 mile, passing on the left the salt-water lake of Sumji Ling Tso, about 1¾ mile in length and ¾ mile broad. Another 2 miles of gentle rise and fall at foot of low hills brings the large salt lake of Mang-tsa in view. 3 miles further is Simmo-kur-kur, whence there is a full view of west end of Mang-tsa lake. Shortness of the march necessitated by uncertainty of finding water within the next six miles.
„ 25	Simmo-kur-kur.	Tashlik-(Tashliak) kul (17th stage)	*16,620	12½	Continue along valley for 2½ miles in an easterly direction with gentle rise and fall, then ascend for 1 mile N.E. by E. over brow of hill. Descending, the road turns to E.N.E. for 4 miles, nearing the edge of Mang-tsa lake. After leaving lake at the 7½th mile, the valley opens out, and 5 miles farther of gradual ascent in a N.E. direction lead to camp abreast of Tashlik-kul lake. This lake is much smaller than the Mang-tsa, but its water is sweet. Road excellent all the way. Good camping ground. Wild asses and antelope seen.
„ 26	Tashlik-kul	Tung-mar camp (18th stage)	About 17,000	9¾	Leaving S.W. end of Tashlik-kul lake continue up valley N.E. by E. for 2½ miles, then turn N.N.E. into narrow valley with gradual ascent for 3½ miles, at 6th mile gradual descent for ½ mile N.N.E., crossing stream and ridge of hills. Ascent and descent

* All heights marked thus * from Pundit Kishen Singh's observations.

					the valley opens out, and 5 miles farther of gradual ascent in a N.E. direction to camp abreast of Tashlik-kul lake. This lake is much smaller than the Mang-tsu, but its water is sweet. Road excellent all the way. Good camping ground. Wild asses and antelope seen.
„ 26	Tashlik-kul	Tung-mar camp (18th stage)	About 17,000	9¾	Leaving S.W. end of Tashlik-kul lake continue up valley N.E. by E. for 2½ miles, then turn N.N.E. into narrow valley with gradual ascent for 3½ miles, at 6th mile gradual descent for ½ mile N.N.E., crossing stream and ridge of hills. Ascent and descent

* All heights marked thus * from Pundit Kishen Singh's observations.

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
					rather steep into very narrow valley, which runs into open plain N.E. by E. for 1½ mile from foot of descent. The meaning of "Tung-mar" is "red earth." Road excellent, good camping ground.
Aug. 27	Tung-mar ..	Tak-nak (Dak-nak) camp (19th stage)	..	22	Continue along plain for 1¾ mile N.E. by E., then turn gently N.N.E. for 1½ mile and cross stream, again N.E. by N., rounding hill. Gradual ascent for 7½ miles E.N.E. to top of pass, where the course changes to E. by N. for 4 miles over high hilly country, with gradual ascent to top of second pass. From head of pass gradual descent for 3 miles E. by N. to foot of pass.
„ 28	The travellers were overtaken by a snowstorm on the previous night, and had to pass the night in the open. In the morning they succeeded in finding the road, which is neither marked by track nor sign. 3½ miles' march brought them to camp Tak-nak, nicely situated on bank of stream, with fuel and grass plentiful, at the west end of a long and extensive plain. A march of 3 miles farther was all they could accomplish, as it was necessary to give both man and beast a rest. Good camping ground; road excellent all the way, but soft from the snow.				
„ 29	Camp	Kalung Karbu camp (20th stage)	..	14½	Continue along plain for 11 miles E. by N., then cross stream and turn gently to E.N.E., recrossing stream at 14½ mile. Name of camping place suggested by Tartar guide. Road excellent, and nearly level all the way, but the red clay soil continues soft from melting snow. Wild yaks seen.
„ 30	Kalung Karbu	Dhong Lung camp (21st stage)	..	14	Continue along plain for 3 miles E.N.E., then turn gently N.E. by E. for 1½ mile. From here road lies in a N.E. direction for 7 miles along west end of Yeshul-kul salt lake. Leaving lake, gradual ascent in a northerly direction, and 2½ miles farther to camp; fuel and grass plentiful, water very scarce.
„ 31	Dhong Lung	Togral Onbo camp (22nd stage)	..	7½	Ascent over hilly country for 6 miles north to top of small pass, then gradual descent in the same direction for 1½ mile, and camp. Road good, fuel and grass plentiful. Sighted a long extensive lake in a S.E. direction, probably the source of same river.
Sept. 1	Togral Onbo	Tangra Chu-zak camp (23rd stage)	..	16½	On leaving camp, cross stream and ascend valley gradually for 2½ miles N.E. by N. Continue along valley in same direction for 4½ miles to head of pass, ascending gradually at the last mile. From top of pass descend and ascend gradually for 1 mile N. by E. over high hilly country, and 3 miles N.N.E. on fairly level ground to large plain with snowclad mountains and glaciers on the west side, and undulating hills on the east. 6 miles farther along plain N.N.E. is camp. From pass several streams are crossed, which fall into lake, and flow out again in a fair-sized stream. Road very good all the way, but owing to flooded state of plain, red clay soil yielded a foot to the baggage

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
					animals. Good camping ground; large herds of antelope. The pass forms the boundary between Tibet and Chinese Turkistan (Kashgaria). The Kuen Luen stands out in solemn grandeur with its snow-capped peaks.
Sept. 2	Tangra Chuzak.	Iksu camp (24th stage)	..	17	Continue along plain in a northerly direction for 1 mile, then turn N.E. for 1½ mile, and cross stream. Then turn to N.E. for 3 miles, skirting No. 2 lake. At the 5½th mile cross stream running from lake. Here the road leaves the plain, and becomes stony for the next 7 miles, with very gradual descent and a few slight ascents over undulating hills to camp. The range of snowy mountains still conspicuous on the west; to the east low undulating hills.
„ 3	Iksu	Baba Hatun (25th stage)	*16,020	4	Ford small stream, and cross shoulder of hill 1 mile N.E., rejoin large stream from lake (*16,880 feet) called by Pundit Kishen Singh, "Keria river." 3 miles further along river to camp; ruins of old frontier fort on precipitous rock overhanging the river. Good sport with antelope and yak.
„ 4	Owing to a mistake in the map to illustrate Kishen Singh's route, which they were following, the travellers were obliged to return to camp, and search for the pass. This they soon found.				
„ 5	Camp	Aksu camp (26th stage)	..	12	Leaving Baba-hatun, road lies in a N.W. by N. direction for 3 miles with gradual ascent into ravine leading to the Kizil-dawan pass. Steep climb of 1 mile leads to the top of pass. Road good but stony, with gradual descent for 3 miles down winding ravine with stream; 5 miles further, in a N.W. and N.W. by N. direction, on small plain between two streams, is camp Aksu. Good camping ground, grass scarce.
„ 6	Aksu	Ghubolik camp (27th stage)	*16,960	20	Leaving camp, cross small stream from S.W. and follow in a nearly N.N.W. direction for 4½ miles, when you leave stream and turn N.W. by W. for 3 miles of gentle ascent to top of easy pass. Gradual descent of 4 miles down ravine W. by N. half N., then enter broad undulating plain, much honeycombed. 5½ miles further is Ghubolik, well situated near Ulugh-shah-i-kul lake with sulphur-mines in neighbourhood, and stone huts built by the miners. Good camping ground; fuel, grass, and water plentiful.
„ 7	Rested at Ghubolik.				
„ 8 to 12	Ghubolik ..	Polu	*8,430	42	Leaving Ghubolik, cross shoulder of hill 2½ miles from camp N.W. by N. and enter large plain; for 1½ mile road still runs in the same direction, then turns N.N.W. for 2 miles. Gradual ascent along plain for 6½ miles N. by W., then enter ravine in N. and N.N.E. direction for 1½ mile to top of pass. Hence descend abruptly down ravine for 5½ miles N. ¼ E. Road very stony and very difficult for baggage animals.

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
					Enter second ravine where road joins Polu stream in a northerly direction, and after marching 2 miles encamp. Grass and fuel scarce.
					Leaving camp enter narrow gorge, where road lies over huge boulders and becomes impracticable for baggage animals. Several steep ascents and descents over high ridges. Tartars carrying the loads, then returning and leading the ponies. In two days only marched 8 miles. Road very stony, continues down narrow gorge, crossing and recrossing Polu stream, and is all but impracticable for baggage animals. After 3 miles of this difficult marching road improves and green patches of cultivation come in sight. 2 miles farther is the small village of Ala Jai, excavated in the side of the sand-hill.
					A pleasant ride of 4½ miles in a N. and N.W. direction to Polu, a village of about 60 houses, well situated at the foot of low undulating sand-hills.
Sept. 14 to 18	The travellers remained for four days at Polu, and were visited by the Chinese officials. Here they dismissed their pony caravan, and made arrangements with the villagers to convey their baggage to Keria.				
„ 19	Polu	Camp on Keria river.	†8200	16½	Road descends gorge for 2 miles N.N.E., and crosses stream, then winds along the side of undulating hills with gentle ascents and descents in a N.N.W. direction for 9 miles. Good camping ground, with a little fuel and grass. Water difficult to get, owing to the precipitous banks of river about 200 feet high.
„ 20	Camp	Bughaz camp	..	15	Leaving camp, continue in a N. direction for 1½ mile alongside of low sandy hills. Here the river finds its level as it leaves the hills and enters plain. 2½ miles farther still, in a N. direction, cross the Keria canal, and turn to N. by E. for 5 miles up to rest-house, Toghnak-langar. 5 miles farther N. by W. is the large village of Bughaz, with about 200 houses and cultivation. Road excellent all the way.
„ 21	Bughaz ..	Keria	†4700	12	From Bughaz road runs N.E. by N. for 7 miles along barren plain. 5 miles farther is the town of Keria.
	Halt at Keria for nine days.				
Oct. 1	Keria	Yar-langar (Ya-langar)	..	22½	Cultivation of Keria extends for 8 miles; from this point reeds and grass jungle to Yar Langar, a very small village with scanty cultivation. Open country and excellent road.
„ 2	Yar-langar	Domákú ..	..	11½	5 miles from Yar-langar is the village of Karakia (Kara-kyr), with about twenty houses and extensive cultivation; 6½ miles farther is Domákú, a village of several houses and extensive cultivation. Open country, with excellent road.
„ 3	Domákú ..	Chira	†4500	18½	8½ miles from Domákú is the village and bazar of Gulakma, with fair cultivation; 10 miles farther is the large village and bazar of Chira.

† Prejevalsky's observations.

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
Oct. 4	Chira	Bash Toghrak	..	18½	3½ miles from Chira leave cultivation and enter sandy desert. At 6th mile pass one solitary house and small patch of cultivation. At 8th mile pass small Langar. Country unlevel, with numbers of small trees. At 13½th mile pass another small Langar. From here the country becomes a sandy desert to Bash Toghrak. No cultivation; water drawn from well brackish; no supplies to be had.
„ 5	Bash Toghrak	Lob	..	15½	Journey across desert. Two Langars at 5th and 8th mile. Enter on cultivation at 14th mile, close to the village of Dol. Road excellent.
„ 6	Lob	Khotan city	†4400	15	Journey through cultivation; road excellent all the way. Pass Char Shamba bazar, 7½ miles from Khotan, and cross Yurung Kash river about a mile from the city.
	The travellers rested at Khotan till the 15th October.				
	Distance from Leh to Khotan by route travelled, viâ Polu and Keria			508½	
					Section II.
„ 16	Khotan ..	Yanghi-arik (1st stage)	..	10	Road runs N. through cultivation for 2 miles. At the end of 2nd mile leave cultivation and enter on very good pasture land for 7 miles in a N.W. by N. direction. 1 mile farther is small village of Yanghi-arik, with good cultivation. Road excellent all the way, except at the crossing of a canal.
„ 17	Yanghi-arik	Tarashlik-langar (2nd stage)	..	11½	Road winds along left bank of the Yurung Kash river in a N.N.E. direction, over a flat uncultivated country up to Langar, which consists of one solitary house and mosque. Good pasturage; road excellent; good camping ground.
„ 18	Tarashlik ..	Yemen Buk (3rd stage)	..	11	Road continues to wind along left bank of the river in a N.N.E. direction over flat uncultivated country for 9½ miles. From here it turns abruptly to the east for 1½ mile through thick jungle. Road excellent all the way.
„ 19	Yemen Buk	Islamabad .. (4th stage)	..	10	Continue along left bank of river in a N.E. by N. direction over flat uncultivated country, with jungle and good pasturage, to the small village of Islamabad, which has a nice patch of very good cultivation. On the other side of the river is the large village of Tawakal, with about 200 houses and a long strip of cultivation.
„ 20	Islamabad ..	Ouryea .. (5th stage)	..	10½	On leaving Islamabad part with cultivation, but not all signs of habitation, as you very often come upon shepherds with their flocks. The road winds along the left bank of the river in a N.N.E. direction, through shrubbery and long grass jungle. Road excellent. Good camping ground.
„ 21	Ouryea ..	Bugaz Yentak (6th stage)	..	12½	The road still follows left bank of river in a N. by E. direction over flat country, and a few gentle rises and falls over sand-hillocks. A great deal of shrub and long grass jungle.

† Prejevalsky's observation.

Date.	From	To	Elevation.	Distance.	Remarks.
1885. Oct. 22	Bugaz Yentak	Fakhtak .. (7th stage)	feet. ..	miles. 10¾	Two miles from camp N. by E. is camp Koshlush, and 1 mile farther the ford over the Karakash river, which joins the Yurung Kash river a little lower down. From the junction the river is called the Khotan river. The road winds along left bank of Khotan river in a N. by E. direction over flat country, with a few gentle rises and falls over sandy hillocks. Large patches of shrub and grass jungle. Good camping ground; road excellent all the way.
„ 23	Fakhtak ..	Marjan Uldi (8th stage)	..	12½	At 3 miles from camp pass camp Ak Bash. Road still follows the river in a N.N.E. direction over flat country, with one or two gentle rises and falls over sandy hillocks. Long strips of shrubbery and grass jungle. Good camping ground; road excellent.
„ 24	Marjan Uldi	Gilam Yedi (9th stage)	..	10	Four miles from camp pass camp Mazar Tagh. There is a shrine here perched on the top of a double range of hills, which begin at the camp and run nearly N.W. towards Maral Bashi. The hills are 500 feet above the plain, and by some freak of nature the southern range is red in colour and the northern white. The road still follows the river in a N. by E. direction over flat country, through long strips of shrubbery and jungle. Good camping ground; road excellent; water scarce.
„ 25	Gilam Yedi	Aghaz .. .. (10th stage)	..	9	Road still winds along left bank of river in a northerly direction for 7 miles, then turns gently to N.W. over flat country, through a long strip of shrubbery and jungle to camp. Good camping ground; water very scarce. The river is very low at this season, and loses itself in the sand. Road excellent.
„ 26	Aghaz	Bash Kurla (11th stage)	..	14	Road along bed of Khotan river, which has run itself dry, in a N. by W. direction to camp. Good camping ground; water scarce; road excellent.
„ 27	Bash Kurla	Gongnong Masjid (12th stage)	..	10½	Along bed of river in a N. by W. direction to camp. Pass camp Quaendu 6½ miles from camp. Thick shrubbery and long grass jungle on both sides of river. Good camping ground on small island. Water scarce; road excellent.
„ 28	Gongnong Masjid.	Rosa Bai Tamshuk (13th stage)	..	10½	Along bed of river in a northerly direction. Pass camp Bidili Kotak 6 miles. Thick shrubbery and long grass on both sides of river. Good camping ground; water scarce; road excellent.
„ 29	Rosa Bai Tamshuk.	Bora .. .. (14th stage)	..	10	Along bed of river in a northerly direction. Thick shrubbery and long grass jungle. Water scarce; road excellent.
„ 30	Bora	Ghalchilik .. (15th stage)	..	16	Along bed of river in a northerly direction to camp. Country still open with low sandy hillocks; thick shrubbery and long jungle. At the 7½th mile the river has changed its channel, cutting through jungle on the left bank. Good camping ground. Water plentiful; road excellent.

					Tawakal, with about 200 houses and a long strip of cultivation, but not all signs of habitation, as you very
„ 20	Islamabad ..	Ouryea .. (5th stage)	..	10½	On leaving Islamabad part with cultivation, but not all signs of habitation, as you very often come upon shepherds with their flocks. The road winds along the left bank of the river in a N.N.E. direction, through shrubbery and long grass jungle. Road excellent. Good camping ground.
„ 21	Ouryea ..	Bugaz Yentak (6th stage)	..	12½	The road still follows left bank of river in a N. by E. direction over flat country, and a few gentle rises and falls over sand-hillocks. A great deal of shrub and long grass jungle.

† Prejevalsky's observation.

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
Oct. 31	Ghalchilik ..	Dalish-na-Aralchi (16th stage)	..	16	Along bed of river in a nearly N.N.E. direction. Thick shrubbery and long grass on both sides. At 6½ miles pass camp Yalguz-ning-kum, where the new channel joins the old. Good camping ground; water scarce; road excellent.
Nov. 1	Dalish-na-Aralchi.	Zil-ning Aghzi (17th stage)	..	9½	Along bed of river in a N. by E. direction. Thick shrubbery and jungle. Good camping ground; water fairly plentiful in pool by left bank of river; road excellent.
„ 2	Zil-ning Aghzi.	Tarim ferry (18th stage)	†3,100 (confluence of Ak-su and Yarkand-daria.)	13½	On leaving camp road leaves the Khotan river and turns gently in a N.W. direction, through jungle for 6½ miles to Toghrak, and for 5½ miles farther in the same direction, chiefly over sandy desert, with gentle rise and fall over sand-hillocks. At the 11½th mile the road turns to the north through shrubbery, and on nearing the Tarim river turns to N.E. Good camping ground on the left bank of the Tarim; road good, but heavy for the animals owing to the soft yielding sand. No water to be had throughout the march. The Khotan river, averaging ¾ of a mile in width, flows into the Tarim further east. The Yarkand and Ak-su rivers unite 2½ miles west from the ferry. In summer the ferry is often at the junction.
„ 3 & 4	The travellers rested at the ferry to procure supplies from Karatal, 27 miles from ferry on the Ak-su road.				
„ 5	Tarim ferry ..	Aghir-ya .. (19th stage)	..	8½	Road (more correctly pathway) winds along the Tarim in a N.E. direction through thick thorny jungle. Several shepherds' huts and a water-mill passed. At 5½ miles a small lake called Sissik-kul. Good camping ground; grass, fuel, and water plentiful; road good and level all the way. The country is flat and open for many miles, with thick shrubbery and grass jungle.
„ 6	Aghir-ya ..	Urak Balik (20th stage)	..	14½	Follow left bank of Tarim for 1½ mile to camp Aghir-ya, with solitary mosque for travellers. 1 mile farther N. by E., the road leaves the river slightly, and remains so to camp. At 6½ miles Akchul Masjid, a solitary mosque with well, is passed, also intended for travellers. At 9½ miles pass Camp Tawak Kaldi; 5 miles farther N.E. by E., through plantation and grass jungle, is camp Urak Balik on the Tarim. Good camping ground; road excellent, but dusty. Passed several shepherds tending flocks.
„ 7	Urak Balik ..	Arik Aghzi (21st stage)	..	15	Road winds along left bank of Tarim in a N.E. by E. direction. At 5½ miles pass Alakum camp, where are several shepherds' huts; at 7½ miles pass road to Kuchar, running north; about half a mile farther cross Kuchar stream. This stream dries up in winter and early spring. At the 9th mile cross small stream; 6 miles farther is Arik aghzi, on bank of branch stream of Tarim. Road excellent, through plantations and long strips of prairie.

† Prejevalsky's observation.

		(21st stage)			kum camp, where are several shepherds' huts; at 7½ miles pass road to Kuchar, running north; about half a mile farther cross Kuchar stream. This stream dries up in winter and early spring. At the 9th mile cross small stream; 6 miles farther is Arik aghzi, on bank of branch stream of Tarim. Road excellent, through plantations and long strips of prairie.

† Prejevalsky's observation.

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
Nov. 8	Arik Aghzi	Sarikh Kush (22nd stage)	..	9	Road close to left bank of Tarim in a N.E. by E. direction. At 3rd mile pass Pachanlik, a shepherds' camp, and at 5th mile Yarishlik. Here lies the boundary between the Ak-su and Shah-yar grazing lands. At 6th mile, about 1 mile north of road, is Yulghun or Ermin Kul lake; 3 miles farther is Sarikh Kush. Good camping ground on bank of Tarim. Road excellent, through shrubbery and long reed jungle.
„ 9	Sarikh Kush	Kok Chul .. (23rd stage)	..	12½	Road leaves river at Sarikh Kush, and runs in a N.E. direction to camp. At the 2½nd mile pass a small lake; at 4¼th, shepherds' huts at Suri, and cross Achal stream; at 5th mile strike northern channel of Tarim river (nearly dry), and follow its banks to Kok-Chul, crossing it at the 10th mile. Road excellent, through thick reedy jungle and patches of shrubbery. Good camping ground on bank of river.
„ 10	Kok Chul ..	Tawak Jai .. (24th stage)	..	11	Road runs N.E. to camp. At 2nd mile northern channel of Tarim recedes more to the north. At 3½rd mile pass Po-dong camp, and 7½ miles Titar or Tittar Akin. Good road, and camping ground on bank of branch stream from Tarim.
„ 11	Tawak Jai ..	Tippak .. (25th stage)	..	8½	Road runs N.E. by N. to camp. At 3rd mile cross low ridge of sandy hillocks into desert, with a little scattered brushwood to end of 4th mile.
„ 12	Tippak ..	Shah Yar .. (26th stage)	..	18½	Road runs in a N.E. by N. direction the first 10½ miles, over sandy desert nearly the whole way, leaving the northern channel of the Tarim at Tippak, which now turns off to the south. At the 11th mile the road turns to the S.E., through rice-fields, to the small bazaar of Shah Yar. 2½ miles from bazaar cross Chimin canal. Road excellent. Shah Yar is a large village, with extensive cultivation, chiefly rice, and has a population of 2000 inhabitants.
„ 13	Rested at Shah Yar.				
„ 14	Shah Yar ..	Char Shamba bazaar (27th stage)	..	18	Road takes a northerly direction. At the 3rd mile cross the Shah Yar river by wooden bridge 100 feet in length, called Shamal Kubruk. Road runs partly through cultivation and jungle, with patches of sandy desert, and is very good all the way. Char Shamba is a small village, but has extensive cultivation, chiefly rice, and a number of houses scattered over the country.
„ 15	Char Shamba bazaar	Kucha (or Kuchar) city (28th stage)	..	11	Road, which is excellent, runs in a northerly direction through extensive rice-fields to the suburb of the city. Kuchar is well situated near the foot of the mountains, and has a population of 15,000 inhabitants, Mahommedans, Tunganis, and Chinese. A large mountain stream flows past the east side of the city, and runs south.
„ 16 & 17	They remained a day at Kuchar, interviewing the Chinese authorities, and trying to obtain permission to proceed to Lob-nor. Having succeeded in this, they retraced their steps to Shah Yar, and prepared to continue their journey along the Tarim.				

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	
Nov. 18	Kucha	Char Shamba.			
„ 19	Char Shamba	Shah Yar.			
„ 20	Rested at Shah Yar to get supplies.				
„ 21	Shah Yar ..	Kum Arik (3rd stage)	..	20	Road runs in an E.S.E. direction. At 7th mile pass Khan Dau, a small village with rice cultivation. At 8th mile ford branch stream from Shah Yar river, and recross it on reaching Kum Arik, a small scattered village, with rice and wheat cultivation. Road excellent; passes through jungle in several places.
„ 22	Kum Arik ..	Kok Chul .. (4th stage)	..	11	Road takes a S.E. by E. direction. Pass several shepherds' camps on the march, and at the 8th mile cross branch stream from the Shah Yar river. Good camping ground on the left bank of the Tarim's north channel. Road excellent.
„ 23	Kok Chul ..	Khâda Dung (5th stage)	..	10½	Road winds along the left bank of the Tarim's north channel in an easterly direction. At 3rd mile pass Acha-nam's shrine, and at 4½th mile pass another holy shrine called Arawata. At 7½th mile cross boundary line between grazing lands of Shah Yar and Kuchar shepherds. Road excellent, through thick shrubbery and grass jungle.
„ 24	Khâda Dung	Chak Asti .. (6th stage)	..	11	Road winds along the left bank of the Tarim's north channel in an easterly direction up to the 8th mile, when it gradually leaves the river, owing to extensive swamps. Road excellent.
„ 25	Chak Asti ..	Shupurlik .. (7th stage)	..	10	Road runs in an easterly direction, skirting extensive swamps and small streams from the Tarim's north channel. Road excellent, partly through shrubbery and prairie land. A little east of Shupurlik is the boundary line for the Kuchar and Bugar shepherds.
„ 26	Shupurlik ..	Trying to find road to Tarim's northern channel. Obliged to come back to last night's camp owing to extensive swamps only partly frozen over.			
„ 27	Shupurlik ..	Bash Kul Khan (8th stage)	..	10	No road but one of own making in north-easterly direction to camp, skirting extensive swamps. Road for several miles soft and heavy, crossing sandy desert.
„ 28	Bash Kul Khan	Dung Kotan (9th stage)	..	7	Marched in an easterly direction for 3 miles, chiefly through desert, which at some previous time must have been a jungle, from the immense quantities of roots and branches of trees that are lying about. At the 4th mile turned in a southerly direction, entering at the fifth mile long reedy jungle and skirting the swamps, and crossing and recrossing branch stream from Tarim's north channel by rustic bridges. The second was so dilapidated that it was necessary to repair it before taking the animals over. At the 6th mile, owing to lakes and swamps, had to turn once more in an easterly direction. At the 7th mile again find ourselves on the wrong side of the branch stream, and without a bridge this time.

Date.	From	To	Elevation.	Distance.	Remarks.
					recrossing branch stream from Tarim's north channel by rude bridge. The road was so dilapidated that it was necessary to repair it before taking the animals over. At the 6th mile, owing to lakes and swamps, had to turn once more in an easterly direction. At the 7th mile again find ourselves on the wrong side of the branch stream, and without a bridge this time.
1885.			feet.	miles.	
Nov. 29	Dung Khotan	Jigda Tigish (10th stage)	..	9	Forded stream safely, then turned south for the first half mile, striking another large stream from Tarim's north channel. Followed the left bank of the stream in an E. by S. direction up to camp. Road through dense reedy jungle, with extensive swamps and sheets of water only partly frozen.
„ 30	Jigda Tigish	Abdul Shukar (11th stage)	..	9	Road runs in a N.E. by E. direction for 3½ miles through dense reed jungle. Here branch stream No. 1 joins large branch stream. Rustic bridge, requiring repairs, over No. 1 stream. From here the road runs in an E.S.E. direction to camp through grass jungle and two patches of shrubbery. Road winds along left bank of stream all the way. At 4th mile there is a gentle rise, and the swampy ground disappears entirely.
Dec. 1	Abdul Shukar	Kum Jainak (12th stage)	..	14	For the first 4½ miles road runs E.S.E. near bank of stream, which now joins the parent river. For the next 7½ miles the road runs E.N.E., winding along the left bank of Tarim's north channel. 2 miles farther, in E.S.E. direction, is camp Kum Jainak, on bank of north channel. Road runs through grass jungle and patches of forest and shrubbery, where the ground is very soft and yielding.
„ 2	Kum Jainak	Salima.. .. (13th stage)	..	11	Road runs in an E.S.E. direction, winding along left bank of Tarim's north channel and through long strips of forest and shrubbery and small patches of grass jungle. Road soft and heavy in places. A little outside jungle lies a vast extent of sandy desert. We are now in Kurla district.
„ 3	Salima.. ..	Agro Kul .. (14th stage)	..	10	Road runs N.E. by E. along Tarim's north channel and through long strips of forest and shrubbery and small patches of grass jungle. Shah Yar river about 8 miles to the north.
„ 4	Agro Kul ..	Chong Kema (15th stage)	..	9	Road zigzags a great deal, making an E.N.E. course. At 3½ miles pass Jigda Bashlam, one solitary shepherd's hut. Tarim's north channel becomes narrow, only 15 yards wide, and frozen right across. Kurla shepherds tending their flocks on bank. Road good.
„ 5	Chong Kema	Aghacha Kum (16th stage)	..	10	Course E. by N. Road good, but trying in many places, owing to the thick shrubbery and dense jungle it passes through. Tarim's north channel now turns to the E. and E.S.E. The mountains to the north come in view.
„ 6	Aghacha Kum	Unbesh Arik	..	5	Camp on bank of Tarim's north channel, only 2 miles below that of previous day. A tiger killed one of the donkeys of the caravan.
„ 7	Unbesh Arik	Kema Sala .. (17th stage)	..	7½	Marched in a N.E. direction, and encamped on right bank of Shah Yar, now called Inchiki river. Road good, through shrubbery and grass jungle.
„ 8	Kema Sala	Kultokmit Kul	..	10½	Short trip in S.E. direction to junction of north and south channels of Tarim. The north channel is called *Ugen*, the south *Tarim*. Road good, through grass and reed

Date.	From	To	Elevation.	Distance.	Remarks.
1885.			feet.	miles.	jungle with belt of sandy desert from 4th to 6th mile. Encamped in the small village of Kultokmit-Kul on the right bank of the Ugen, the frontier of the Lob district. Crossed the Ugen on the ice.
Dec. 9	Rested at Kultokmit-Kul		..	..	The south or main channel of the Tarim is 300 yards wide at the junction. Lob-nor road runs east from here.
„ 10	Returned to Kema Sala.				
„ 11	Kema Sala ..	Kuenchi ..	..	7	Crossed the Inchiki or Shah Yar river *en route* for Kurla. Road excellent, runs N.N.W. to camp through strips of shrubbery and forest; crossed also Kurla river over the ice.
„ 12	Kuenchi ..	Shinagha ..	..	13	Road excellent, in a N.W. direction through forest, then N. by W. ½ W. through sandy desert with a little shrubbery to small village of Shinagha.
„ 13	Shinagha ..	Kurla City ..	..	9	Road enters sandy desert; at 3rd mile passes small village of Bashingiz and again enters desert, which continues up to 8th mile, where cultivation of Kurla begins.
	Distance from Khotan to Kurla by route travelled via the Khotan and Tarim rivers, and by Kultokmit and Shinagha			537¼	
„ 16	Kurla .. .. (Korla)	Shorshuk ..	..	15½	On leaving Kurla cross Kurla river by wooden bridge and enter the bazar and Yanghi Shahr, where the Chinese and Tunganis have found a place of shelter. At 3rd mile ascend gently and enter the mountains and pass through narrow defile to the 6½th mile, where there is an old fort built by the late Atalik Ghazi. From here enter valley which opens out about 1½ mile from fort into a large barren plain. At 8½th mile pass Ak Tagh Langar. Shorshuk lies in a N.E. by N. direction from Kurla in the centre of a desert with only a few rest houses and serais. Road good, but in many places heavy owing to yielding sands.
„ 17	Shorshuk ..	Karashahr city.	..	12	Road runs N.E. the first 6 miles through desert to Dhungzil Langar. A little beyond are the ruins of the old city of Karashahr. At 7½th mile pass Kalka Mazar, a little to the left of road. From Dhungzil road runs N. by E. to Karashahr, and the extensive level plain watered by the Karashahr river becomes a prairie, and is the home of a large body of Kalmaks. Before entering the city crossed the Karashahr river, now frozen.
	Distance from Kurla to Karashahr ..			27½	
„ 18 to 26	Rested at Karashahr, and after passing a quiet Christmas among Turks and Tartars, returned to Kurla city, and remained there till winter was over.				
			SECTION III.		
Feb. 8, 1886	Kurla	Bota	..	13	Road runs W. by S. through cultivation to the village of Bota, on left bank of Kurla river, and near where this river flows into the large lake of Bota-Kul.

SECTION III.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
Feb. 8, 1886	Kurla	Bota	..	13	Road runs W. by S. through cultivation to the village of Bota, on left bank of Kurla river, and near where this river flows into the large lake of Bota-Kul.
Feb. 9	Bota	Yandem ..	..	8½	Road very good in a S.W. direction through barren wastes with patches of grazing land.
„ 10	Yandem ..	Akchigh ..	..	9	Road runs S. for the first 5 miles, then turns S.E. through patches of old forest with soft sandy soil.
„ 11	Akchigh ..	Kuenchi Mazar.	..	6½	Road runs E.S.E. through strips of forest with large patches of grazing land. There are two houses and masjid here, with the mazar a little to the north of the road on a sandy hill, visited by a large number of people from Kurla throughout the year.
„ 12	Kuenchi Mazar.	Asmo Chikar	..	9½	Road runs E.S.E., turning and twisting a great deal through long strips of forest and shrubbery, with fine patches of grazing land near the banks of the river. A few miles away is a belt of sandy waste with a little brushwood.
„ 13	Asmo Chikar	Kuozak Kuenda.	..	10	Road runs E.S.E., crossing and recrossing the river on the ice through strips of old forest with patches of grazing land and brushwood.
„ 14	Kuozak Kuenda.	Kuenchi Ak-chigh.	..	5½	Made an easterly course and joined the high road to Lob-nor, half a mile from Kuenchi. Road runs through strips of old forest with patches of grazing land and brushwood. Camp on the right bank of the Kurla river.
„ 15	Kuenchi	Kema Sala	..	7	On the banks of the Inchiki river.
„ 16	Kema Sala	Kultokmit Kul	..	10½	On the banks of the Ugen river.
„ 17	Remained at Kultokmit Kul, where the commissariat supplies, 43 donkey-loads of grain, rice, and flour, were received.				
„ 18	Marched slowly along banks of the Tarim with the chief beg of the Lob-nor district to his home in Kirchin. Remained his guest till the 24th.*				
„ 19	Kultokmit Kul*	Kais Kul or Akhtarma,	..	11½	Small village of reed huts. Half a mile from Kultokmit Kul the Ugen river joins the Tarim. At 6th mile pass the small village of Aghix. Road excellent, in an E.S.E. direction, near the left bank of the Tarim, through reeds and grass.
„ 20	Kais Kul	Ulugh Kul	..	13½	Small village of reed huts. Road good, runs in an E.S.E. direction over sandy waste and patches of grass and reed jungle, and a little shrubbery. At 6th mile pass Yenghi Kul village. The Tarim now flows to the south of the road, and S.W. of Ulugh Kul it splits in two.
„ 21	Ulugh Kul ..	Kirchin (or Kara-Kul).	..	13½	Small village of reed huts; residence of the chief beg of Lob-nor district. Road good, runs E. by S. for 3 miles, near to Kargha-asta village, then S.E. to Kirchin. At 7½th mile pass Kogully village, and cross upper channel of the Tarim; at 8½ miles pass the small village of Chigalik. From this point the road runs through marshy land, now fortunately frozen over. A road running N.E. from Kirchin goes to Turfan.
„ 24	Kirchin ..	Makat.. ..	..	10½	Small village of reed huts, now deserted. Road good; runs in an E.S.E. direction. 3 miles from Kirchin the lower channel of the Kirchin comes close to the road for about 3 miles, then turns S.E. The road passes through a deal of sandy waste.

* I have assigned dates for the following three marches to Kirchin, not given in the original, and assumed that the travellers arrived there on the 21st.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
Feb. 25	Makat	Achik	..	15	Small village of twenty-five reed huts; residence of second beg of Lob. Road good, in an E. direction, with patches of grazing land for 10 miles, to the very small village of Boskal. 5 miles further, in an E.S.E. direction, is Achik.
„ 26	Achik	Karadai ..	..	9½	Small village of twelve reed huts. Road good; runs in a S.E. by E. direction through patches of grazing land and sandy waste. At 6th mile pass Yata Bolda, a very small village. From Achik the road runs parallel with the upper channel of the Tarim.
„ 27	Karadai ..	Arghun (or Aralghan).	..	13¼	Camp on left bank of the Tarim's lower channel. Road good, in a S.E. by S. direction parallel with the Tarim's upper channel, and through patches of grazing lands, old forests, and sandy wastes. Cross the Tarim's lower channel at Arghun. A mile east both channels unite again.
„ 28	Arghun ..	Tokam ..	..	10½	Camp on right bank of Tarim. Road good; runs in a southerly direction through patches of grazing lands and sandy wastes and belts of old forests and shrubbery. The road touches the river at two bends.
March 1	Tokam ..	Kurghan ..	..	13	Camp on right bank of Tarim. Small mud fort built by the late Amir Yakub Beg. This is the frontier of the Kara-Koshin district. The fort is now deserted. Road good; runs in a S. by E. direction through patches of grazing lands and sandy wastes. From here there are two roads into Kara-Koshin—one running in a S.E direction, viâ Chigalik, to Abdal, the Lob-ner, and Kara-Buran lakes; the other in a S.S.W. direction, viâ Lob, to Chaklik.
„ 2	Kurghan ..	Lob	..	10¼	Small village of reed huts on the right bank of the Charchand river, and in the centre of a number of small lakes fed by a branch stream from the Tarim, which leaves the parent river at Chigalik. Road through sandy waste for the first half march, and then through swamps to Lob. At 2 miles from Lob cross stream from Tarim. The soil is very saline here. Lob lies S.W. by S. from Kurghan.
„ 3–6*	Lob	Chaklik ..	3250	22	Village of about seventy mud houses, with nearly 500 inhabitants. Road runs in a S. by W. ¼ W. direction through swamps for 5 miles, then enters on a barren saline soil, and crosses the Chaklik stream (which is very brackish) at the 8th mile. From here the road lies S. by W. to Chaklik over a barren saline waste, the first signs of vegetation appearing about 5 miles from Chaklik. A road running S.W. by W. ½ W. from Chaklik goes to Charchand. Chaklik is the only place of any note in the Lob district, of which it is the granary. Its inhabitants are a simple-minded people, isolated from the world. There is extensive cultivation, irrigated by canals cut from a stream that comes from a fine range of mountains 12 miles to the south of Chaklik. This mountain stream

* According to the diary, Chaklik was reached on the 6th March, but following the stages of the itinerary, it should have been gained on the 3rd of that month; the difference has probably to be distributed over two or three of the longer marches.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	flows hard by Chaklik, and eventually becomes absorbed in the sand, before reaching the Kara-buran water-spread.
	Distance from Kurla to Chaklik by route travelled			221½	
March 17	Chaklik ..	Camp Tuzlik Dhung, Kara Buran lake.	..	19½	Road lies in a N. by E. direction for the first 10½ miles along the road to Lob village. From here the road turns off in a N.E. by E. direction for 9 miles to Tuzlik Dhung. 3½ miles from camp enter on southern edge of lake, which is now only partly under water. There is no wood or grass here, and the water is very brackish.
„ 18	Camp Tuzlik	Camp Yayok or Yorok.	..	14	On right bank of Tarim. Road runs nearly N.E. by E. along the southern edge of the lake for 10 miles. At Su Aralghan the lake is only 1½ mile wide, and about 4 miles from Yayok comes to an end, that is to say, the Tarim (now a mixture of nearly all the waters of Eastern Turkistan as far east as Karashahr) narrows to about 50 yards, and meanders slowly towards the Lob-nor lake. The road runs along a barren saline plain, which has every appearance of having been the bed of an extensive sheet of water. Reedy grass and scrub fringe the river bank; the water is slightly brackish. On the north side of the river there is nothing but a howling sandy waste.
„ 19	Camp Yayok	Camp Abdal	..	10	A small village of twenty-five reed huts on the right bank of the Tarim. Road lies E. by N. ½ N. along a saline plain. On nearing Abdal there is a small patch of ready grass and shrub, and the water is only very slightly brackish here. About 12 miles farther, in an E. by N. direction, is the head of Lob-nor lake. From here also is a road running S.E. by E. for about 50 miles, then turning to the south, and known to the Lob people as the Karashahr-Kalmak road to Lhassa.
„ 20	Abdal	..	..	..	Return march towards Chaklik. Looking westerly from camp there is a fine view of the Kara Buran lake. Its length is a good 20 miles, and 11 miles from north to south in its widest part when the river is in flood.
	Started from Abdal, and returned to Chaklik on the 21st, having travelled on excursion to lakes Kara Buran and Lob-nor			89	The remainder of the winter was spent at Chaklik, and on the 29th April the travellers started for their Tibetan journey.
					Section IV.
April 29	Chaklik ..	Camp	..	3	Encamped outside cultivation, 3 miles east of Chaklik, on large plain, with shrubbery, grass, and water. To the south of the road the stony hard wilderness stretches up to the foot of the mountains for 12 miles.

* According to the diary, Chaklik was reached on the 6th March, but following the stages of the itinerary, it should have been gained on the 3rd of that month; the difference has probably to be distributed over two or three of the longer marches.

Date.	From	To	Elevation.	Distance.	Remarks.
1896.			feet.	miles.	
April 30	Camp	Yandash Kak	..	13	On desert plain. Continue in an easterly direction. Road good. No grass, and brackish water only to be had by digging wells 5 and 6 feet deep. The hills are about 4 miles to the south of camp. General direction travelled E. by S.
May 1	Yandash Kak	Camp Sai ..	..	19	On left bank of mountain stream. Along desert in an easterly direction to camp at foot of the mountains. Road good, but stony for several miles; wood and water plentiful; no grass. General direction travelled E. ¾ N.
„ 2	Sai	Chukar Sai ..	6900 ft. 3 miles S.E. from camp.	9	On high sandy land at foot of mountains. Cross stream. Road runs in an E. by S. direction, with a gradual but steady ascent to camp. Scrub plentiful; no water or grass. Spring of water 3 miles S.E. from camp.
„ 3	Chukar Sai ..	Bulak Bashi	8200	8½	Camp in gorge. Road, which is excellent, runs in an easterly direction and gently turns S.E. by S. with gradual ascent to end of 5th mile. From here the road lies S.E. by S. from the high sandy land 500 feet into gorge, with stream which runs in a northerly direction for about 11 miles, and then loses itself in the sand. From foot of descent the road is stony, with gradual ascent, zigzagging in a general S.S.E. course to camp. Wood (shrubs) and water plentiful; no grass.
„ 4	Bulak Bashi	Camp Saipuk Bulak.	10,700 pass Kum Dawan	4½	In narrow valley. On leaving camp road continues up gorge S.E. by S. for 1½ mile to foot of Kum Dawan Pass. The pass, which is 2 miles in length, with rather abrupt ascent and descent, is very heavy on baggage animals, as the sandy soil is very soft and yielding. From top of pass the road descends into a continuation of the gorge, which now opens out a little, and from foot of pass runs S.E. to camp. Scrub wood plentiful, no grass, and the Bulak or spring bed run dry.
„ 5	Saipuk Bulak	Camp in gorge at foot of Tash-dawan Pass.	..	10½	Road good, up narrow valley for 5½ miles S.E. by E. From here, it turns to the S.S.W. and becomes stony about 2 miles from camp, where the valley close in and becomes once more a gorge. Brushwood, grass, and water plentiful. Spent several hours in making road up pass.
„ 6	Camp ..	Camp Tash Kul Bashi	13,000 Tash Dawan Pass.	4½	Crossed Tash Dawan Pass; ascent and descent very steep, 1 mile long in a S.W. direction. From south side of pass very stony road runs through gorge S.S.W. for 1½ mile, then S.W. by W. to camp. Brushwood, grass, and water plentiful. From top of pass had a grand view of Altun Range. (Cf. Postcript and 'Proceedings' R.G.S., 1869, p. 373.)
„ 7	Camp	Camp Pashalik	..	15½	On left bank of stream in small valley. On leaving camp the road, which is stony, descends gradually through gorge for 2 miles in a S.S.W. direction for the first mile,

					making road up pass.
„ 6	Camp ..	Camp Tash Kul Bashi	13,000 Tash Dawan Pass.	4½	Crossed Tash Dawan Pass; ascent and descent very steep, 1 mile long in a S.W. direction. From south side of pass very stony road runs through gorge S.S.W. for 1½ mile, then S.W. by W. to camp. Brushwood, grass, and water plentiful. From top of pass had a grand view of Altun Range. (Cf. Postcript and 'Proceedings' R.G.S., 1889, p. 375.)
„ 7	Camp	Camp Pashalik	..	15½	On left bank of stream in small valley. On leaving camp the road, which is stony, descends gradually through gorge for 2 miles in a S.S.W. direction for the first mile,

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
					then turns gently to the S.E. From end of 2nd mile the road, which is good, turns sharply to the east and enters narrow ravine, with steady ascent for 1½ mile, where it enters small valley, and still runs in an easterly direction for another 2½ miles, with gentle ascent to end of valley. From here (the 5¾th mile) the track again enters a small narrow ravine and descends in a S.E. by E. direction from 1½st mile into a small valley. At the end of this (7th mile) cross small stream (dry) and turn to S.S.W. for ½ a mile, then S.E. by S. for ¾ mile, and strike the Pashalik stream (crossed at Camp Sai on May 2nd (see *ante*). The road from here is excellent, and turns S. by W. and S. by E. for ¾ of a mile, then S.E. by S. with gentle ascent following and crossing Pashalik stream twice to camp. Half a mile from camp crossed the Illwa Chiman stream running in from the E. and joining the Pashalik stream. Grass, wood, and water plentiful.
May 8	Pashalik ..	Camp Kara Choko.	..	10½	In grassy valley on left bank of Illwa stream. On leaving camp road runs S.E. following Pashalik stream, meandering through small valley with patches of grass for 2½ miles. From here road leaves stream and valley and turns to the E.S.E. along narrow plain, and at the 5½th mile strikes across Illwa stream in an E.S.E. direction through valley to camp. The hills skirting both valleys are low and sandy coloured, rising higher and higher, and becoming bolder and darker in the distance. Road excellent, with gradual rise. Grass and water abundant, wood scarce; argols of wild yak and ass plentiful.
„ 9	Kara Choko	Mandalik ..	..	16	On S. side of plateau. On leaving camp the road runs in an E.S.E. direction along valley for the first mile, then gradually leaves valley and stream and ascends gently through little villages in an E. by S. direction to camp, skirting the foot of mountains on the S. Road very good, becomes a little stony a few miles from camp. No water or grass, brushwood plentiful.
„ 10	Mandalik ..	Camp Uzen Shor.	..	13½	On S. side of plateau. Continue along plain in an easterly direction, skirting foot of mountains. Road good, but stony in places, with slight descent all the march. Grass, wood, and water plentiful, water however is brackish owing to the saline soil.
„ 11	Uzen Shor ..	Camp Chiman Bash-Kul.	..	18½	On extensive plateau 5 miles S.E. by E. of the southern side of the Altun Range. On leaving camp road turns S. by E. for 1 mile to foot of mountains to skirt swamp. From here road lies in an E.N.E. direction, skirting foot of mountains for 5½ miles and passing southern edge of small salt-water lake. From here gradual ascent to the S.E. and enter ravine for 1½ mile, then gorge for 2½ miles, into valley ¾ of a mile S.E. and

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
					1½ mile E.N.E. From here the road turns in a south-easterly direction, and 5 miles from camp leave mountains and valley and enter upon plateau at 7¾ miles from Chiman Bash Kul strike the route of the Karashahr Kalmaks to Tibet (*ante*, p. 31), and after following it for 2¾ miles it turns off due S. Footprints of wild camel seen.
May 12	Chiman Bash Kul.	Camp Bagh Takai.	..	23¾	On Chiman plain, well sheltered by an offshoot of hills, thrown off, as it were, and standing all alone by a large stream that rises in the Altun range, three or four marches E.S.E. from Charchand, and meanders slowly towards the Chiman range. A most glorious camp is this. Grass, water, and wood in abundance, with plenty of shikar. Road excellent, in a S.W. direction along Chiman plain to camp, with gradual rise of 500 feet.
	Expedition camps several days at Bagh Takai to rest men and beasts.				
„ 19	Bagh Takai	Kara Choka	..	5	On Chiman plain and on right bank of stream. Road excellent, runs S. by W. to camp. Wood, grass, and water in abundance. On leaving Bagh Takai ford large stream Kara-sai-daria, flowing in from S.W. by W., and 2 miles from Kara-choka strike another stream flowing from the south.
„ 20	Encamped at Kara Choka.				
„ 21	Kara Choka	Mulli Korgan	..	12½	In valley and on left bank of stream. On leaving camp follow stream right up to Mulli Korgan. 7 miles south from Kara Choka reach foot of mountains, and enter ravine, still going south, for 2½ miles further. From here road turns gently to E.S.E., and opens out into valley on reaching camp. Road excellent, with a very gradual ascent all the way. Wood, grass, and water plentiful. Weather cloudy, with strong westerly wind.
„ 22	Mulli Korgan	Camped to rest baggage animals.			
„ 23	„	Camp north side of Amban Ashkan pass.	13,125	11	Ford several small channels of stream flowing from S.E. Leave it, and cross valley in S. by E. direction for 1¼ mile, then turn to S.W. by S. to camp at foot of pass. Road excellent, with gradual ascent of 10 miles. Vegetation scanty; brushwood, however, plentiful, and water from melting snow.
„ 24	Camp	Camp Manar Dhong.	13,300	9	At mouth of ravine on south side of Chiman range. From camp at north side of the pass the road enters ravine, a steady ascent of 4 miles S.S.W. to top of pass (14,000 feet), then a descent into another ravine in a S. by E. ½ E. direction to camp. From Manar Dhong, looking south, a large plain presents itself before us, and in a westerly direction, 11 miles distant, a very large and magnificent sheet of water, Chong-Kum-Kul lake, stretching for many miles to the east. The south side of the range is dark in hue, bold and rugged.

„ 24	Camp	Camp Manar Dhong.	13,300	9	At mouth of ravine on south side of Chiman range. From camp as [illegible] the road enters ravine, a steady ascent of 4 miles S.S.W. to top of pass (14,000 feet), then a descent into another ravine in a S. by E. ½ E. direction to camp. From Manar Dhong, looking south, a large plain presents itself before us, and in a westerly direction, 11 miles distant, a very large and magnificent sheet of water, Chong-Kum-Kul lake, stretching for many miles to the east. The south side of the range is dark in hue, bold and rugged.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
May 25	Camp	Camp Kum-Kul lake.	..	12¾	On right bank of Kum-kul-daria, near foot of the mountains. Leaving camp, a gentle descent, S.E. by S. ½ S. and S.E., for 2¾ miles, rounding south side of Chiman range. From here road, which is excellent, with gradual rise, lies along plain E.S.E. to camp, following the right bank of the river for 7¾ miles. The river opposite camp is 150 yards wide, and several feet deep, but when in flood, about a month later, it is over a ¼ of a mile in width. Grass scarce, brushwood plentiful. Many antelopes seen.
„ 26	Camp	Camp Kokkan o'Tagh.	..	10¼	On right bank of Kum-Kul-daria. Continue along plain, following the right bank of the river in an E. by S. ½ S. direction to camp. Road excellent, with gentle rise. Wild ass and antelope in great numbers. Brushwood and argols plentiful.
„ 27	Camp	Camp Kalla Ottlak.	..	15½	On plain 1 mile from river. Road excellent, following the river, which now forms a lake called Kum Kul, in a S.E. by E. direction to camp. 5½ miles from Kalla Ottlak is the head of the lake, and from here again follow the river, a mile from the road, swampy ground, fed by springs, intervening. Grass and brushwood plentiful.
„ 28	Crossed the river in a S.W. direction ..			1¼	Camped for several days to improve the condition of the baggage animals. Camp at the foot of a range of sand-hills. Herds of wild ass and antelope grazing within sight of camp.
June 5	Camp	Camp at foot of sand-hills.	..	9½	Road good; runs along foot of the sand-hills, twisting and turning, and skirting the swamp in an easterly direction. Brushwood plentiful, grass scarce. Water from springs oozing from the sand. From camp, looking south (over the sand-hills and along a plain), another range of mountains comes in sight, probably an offshoot from the mighty Kuen Luen.
„ 6	Camp	Camp at foot of sand-hills, near large stream.	..	10	On leaving camp, road runs along foot of sand-hills in a S.S.W. direction for 4¾ miles, when you sight a large stream running in from S.E. From here the road turns S.E. by S., following right bank of stream to camp. From the 5th mile the ground is broken and cut up, causing rises and falls. Brushwood plentiful; grass scarce; water from stream.
„ 7	Camp	Camp in large plain on left bank of very small stream, nearly dry.	..	8	At foot of small strip of hills. Continue along foot of sand-hills, following right bank of large stream for 1 mile S.E. to junction of two streams flowing in from S.W. and S.E. by S., forming the large stream. Following the latter for 1 mile, ford it in a S. by E. direction, over soft yielding sand for 1 mile, 5 miles further over plain S.E. by S. ½ S. Grass getting scarcer, no woods; argols of wild animals as yet fairly plentiful.
„ 8	Remained in camp owing to bad weather.				

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
June 9	Camp	Camp in valley at foot of hills and on bank of small stream, nearly dry.	..	12	Marched along plain S.S.E. for 1 mile, then crossed sand-hills in S.E. direction for 3¾ miles, and entered small valley; marched along it for 7½ miles S.E. ½ E. Road soft and yielding all the way. The hard breathing is very perceptible here, heightened by the strong scent of the brushwood, now in flower.
„ 10	Camp	Camp in valley	..	9	Continued up valley, with gradual ascent in a S. by E. ½ E. direction, following stream to camp, and crossing it twice on the march. The road is good, but made soft by wet weather. Brushwood and grass fairly plentiful.
„ 11	Camp	Camp in glen	..	9¼	Up valley in a S.E. direction for 3 miles, then turned sharply to S.W. for 2¾ miles; cross valley and stream, and entering glen, which turns to W. and W.N.W. for 1 mile, to head of easy pass over ridge. From camp to pass the road is good, but very soft, with steady ascent. From top of pass road runs along the face of the hills, then enters ravine, with a steady descent, in a westerly direction for 2½ miles to camp, which is nicely situated among the hills.
„ 12	Camp	Camp at foot of mountains.	..	10½	On leaving camp forded large stream, 2 feet deep, W.S.W. ½ mile, turning to W. along foot of hills for ¾ mile, then abruptly entering glen and ascending steadily for 1¼ mile S.W. by S. ½ S. towards the mountains. Here we made a bad shot at crossing the range, and instead of going S.S.W., turned off in a S.E. direction 1¾ miles, and crossed the ridge safely. Once over, marched along face of the hills for 1 mile W. by S. ½ S., then entered broad valley and crossed it S.W. ½ W. for 3¼ miles; but seeing that we could not cross to-day another part of the range that has unexpectedly appeared in sight, turned to S. ½ W. for 2 miles, and encamped near stream at foot of mountains. No wood; grass fairly plentiful, but short. Road good, but very soft.
„ 13	Camp	Camp at foot of mountains.	..	8¾	Followed north side of mountains along valley in an E. by S. direction to camp. From the 3½rd mile the valley becomes very undulating and the ground very soft from melting snow. Forced to turn eastward owing to an apparently impenetrable wall appearing in front of us, a perfect sea of mountains, towering higher and higher, with many snowy peaks stretching away to the south. No wood; grass fairly plentiful, but very short.
„ 14	Camp	Camp near left bank of main stream in valley.	..	10¾	Along undulating valley or sand-hills, divided by narrow glens, for 7½ miles E. by S. ½ S., when finding the rise and fall becoming constant, and very fatiguing to the animals, descended gently towards main stream N.E. for 1 mile to more level ground, barren in the extreme; then turned E. by N. for 2½ miles to camp. No wood or grass, nor even argols.

Date.	From	To	Elevation.	Distance.	Remarks.
1886. June 15	Camp	Camp near right bank of main stream in valley.	feet. ..	miles. 11	Crossed main stream, and followed its right bank along undulating valley in an easterly direction to camp. No wood, grass, or argols. Burnt the ridge pole of tent to make a cup of tea. The part of the range on south side of valley ends S. ½ W. from camp, and opens a view of a magnificent range of snow-clad mountains 18,000 feet high, and running E. by N. 12 miles distant. This part of the world is very arid and barren, and as our animals cannot go on much longer without wood or grass, we are forced, much against our will, to cross the hills on the north side of us again, in the hope of finding grass and argols, if not brushwood.
„ 16	Camp	Camp in ravine.	..	14¼	Started in a N. by E. ½ E. direction across valley for 1½ miles with very gradual ascent to foot of mountains, where we entered ravine and ascended steadily in same direction for 2 miles, then descended into another narrow ravine and again ascended steadily 1 mile N. by W. ½ W. reaching the top of the last ridge; a steep descent N.N.E. takes us clear of the range into a valley still arid and barren. Marching across this valley for 1 mile N.N.E. saw that the best road through the mountains in front of us lay further to the W., and turned N.W. by N. for 5½ miles, reaching the foot of the mountains again and entering glen with stream, still going N.W. by N. for 2 miles when the glen becomes a narrow, stony ravine with steady descent. 1 mile further N.N.W. and N. recrossed stream and encamped on a fairly level spot on the face of the hill a little above stream. The change of scenery is complete. From the sandy coloured mountains, arid and barren, you meet with hills of a darker hue, and, though more stony, yet carpeted with a grateful verdure. Grass, brushwood, and argols plentiful.
„ 17	Camp	Camp in glen	..	5¼	On leaving camp the ravine opens again; following and crossing the stream once we made a short march with steady descent over good road in a N. by E. direction. Grass and argols plentiful. Torrent swollen with melting snow.
„ 18	Remained a day in camp to recruit strength of animals, which were in bad condition.				
„ 19	Camp	Camp at foot of valley.	..	5	The glen opens out into a grassy valley. Road good, but a good deal cut up by melting snow. Direction N.E. by N. ½ N., with gentle descent to camp close to low ridge of hills. Grass and argols plentiful. Brushwood scarce. Cooking with damp fuel most trying.
„ 20	Rested to give the animals the benefit of the good pasturage.				
„ 21	Camp	Camp on right bank of stream.	..	10¾	Crossed low ridge of hills N.E. by E. ½ E. 1½ mile with descent into grassy valley, marching in an easterly direction to the 7th mile, then entered the hills again E. by S. and 1 mile from camp turned E. by N., crossing stream. Road good, grass, brushwood,
„ 14	Camp	Camp near left bank of main stream in valley.	..	10¾	snow. Forced to turn eastward owing to an apparently impenetrable wall opposite in front of us, a perfect sea of mountains, towering higher and higher, with many snowy peaks stretching away to the south. No wood; grass fairly plentiful, but very short. Along undulating valley or sand-hills, divided by narrow glens, for 7¼ miles E. by S. ½ S., when finding the rise and fall becoming constant, and very fatiguing to the animals, descended gently towards main stream N.E. for 1 mile to more level ground, barren in the extreme; then turned E. by N. for 2½ miles to camp. No wood or grass, nor even argols.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
					and argols fairly plentiful. The southern side of the Chiman range is now in full view again. The sand-hills that sprang up at Kum-Kul end abreast of camp. We marched for about 25 miles from camp in a N.W. direction, along the plain, the ground rising slightly, and the streams all flowing in an easterly direction. The plain becomes a valley from Kum-Kul.
June 22	Camp	Camp in valley near right bank of main stream.	..	10	Continued along valley skirting the hills in an easterly direction to camp. Road excellent all the way. Grass and brushwood fairly plentiful.
„ 23	Camp	Camp at foot of hills on right bank of main stream.	..	10¾	Marched along the same valley E. by S. ¼ S. to the 6th mile. Here valley closes in and the road, after descending for 1 mile E. by N., turns to E.S.E. over undulating and broken ground, thickly studded with fine scrub and brushwood. The soil now changes its character; instead of a dark firm earth it is now a brick-coloured gravel supporting a sand-grass which is fairly plentiful.
„ 24	Camp	Camp Bokalik in valley on right bank of main stream.	..	3¾	The valley again opens out, and after marching along it for nearly 4 miles encamped to give the animals the benefit of the good grazing. Thorny scrub and brushwood very plentiful. Crossed a stream running from the south. 25 or 30 miles up it gold is found in its bed. There is a good straight road with fuel and grass fairly plentiful from Kum-Kul to Bokalik, frequented every year by Turks from Khotan, who pass viâ Keria and Charchand, and also from Chaklik to work in the gold fields. They arrive about the beginning of July and work till the middle of August, when the cold obliges them to return home again. Their stores and outfit are transported on donkeys.
„ 25	Camp	Camp in valley on right bank of main stream.	..	13½	Along valley in an E. by S. direction to the 10th mile, then crossed a large mountain stream with brick-coloured water, flowing into the main stream from the south, turned east for 3 miles and encamped. Grass scarce, brushwood plentiful. The mountains are becoming sand-coloured again, a sure sign of scanty vegetation.
„ 26	Camp	Camp in valley near main stream.	..	6	Followed valley in an E. by S. ½ S. direction to camp along right bank of main stream. Excellent camping ground, with fine belt of scrub, brushwood, and grass for over a mile on right bank of stream.
„ 27	Camp	Camp in valley, near main stream.	..	10	Followed main stream in valley in a nearly E. by S. direction to camp. A fine strip of grass and shrub.

„ 26	Camp	Camp in valley near main stream.	..	6	Followed valley in an E. by S. ½ S. direction to camp along right bank of main stream. Excellent camping ground, with fine belt of scrub, brushwood, and grass for over a mile on right bank of stream.
„ 27	Camp	Camp in valley near main stream.	..	10	Followed main stream in valley in a nearly E. by S. direction to camp. A fine strip of grass and shrub.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
June 28	Camp	Camp in valley at junction of streams.	..	11½	Continued along valley in an E. ½ S. direction to 9th mile. Then came to a large stream with brick-coloured water 3 feet deep flowing in from S.W., with a very deep channel and high banks, and followed it in a N.E. direction for 2½ miles to junction with main stream, successfully crossed it with all the caravan. No grass; brushwood plentiful.
„ 29	Camp	Camp Bulantai.	..	9	In valley on right bank of main stream, direction E.S.E. for 2½ miles to round bend of river. Road soft and sandy, and over broken ground. Had to turn S. by E. for one mile, then E. by S. for 4½ miles to avoid the deep gullies. Found that the stream cuts through the Chiman range in a northerly direction. Came down to river bank 1 mile N. by W. and encamped in a nice patch of grass and shrubs to give the animals the benefit of the good grazing, and to decide upon the future course. Mosquitoes swarming.
„ 30	Camp nearly flooded by sudden rush of water from a mountain torrent. Moved camping ground to higher ground. Messrs. Carey and Dalgleish reconnoitre for road. The latter finds the track to the north impracticable at this season of the year. He subsequently learned that it led to Hajjar, and was only practicable for baggage animals from October to April.				
July 1	Mr. Carey returns and reports favourably of the route through the mountains on the south. Mosquitoes very troublesome during the day.				
„ 2	Bulantai camp	Camp in ravine.	..	7	Marched in a southerly direction, entering the mountains, gradual ascent to a fine patch of grass in the ravine, 3¾ miles from camp. At about 6th mile crossed sandy ridge. Shrub and brushwood plentiful.
„ 3	Camp	Camp in glen with small stream.	..	9¾	Continued up ravine in a southerly direction for 5 miles to where the valley forks. Road good, but stony, with gradual ascent. The main stream turns S.W., and hills become low and undulating. Leaving stream, turned up ravine to top of ridge that runs S.E. by S. for 3¾ miles, with steady ascent to top of ridge. From here descended gently for 1 mile into narrow glen, and camped for the day. Many signs of nomad camps in the glens and wherever fuel and grass is plentiful.
„ 4	Camp	Camp in valley near stream.	..	11¼	Marched up glen for 1¾ mile E.S.E., where we left glen and stream, and crossed over low hills into smaller glen, going in same direction for 3 miles. From here turned up ravine for 2¼ miles, then E.S.E. for ¼ mile to top of ridge. Road good, with steady ascent all the way. From ridge descended S.E. by S. for ½ mile into undulating valley, and marching along it for 1¼ mile S.E., turned E. ½ N. for 2¼ miles to camp. A little grass, brushwood plentiful.
„ 5	Camp	Camp in glen	..	5½	Struck off in a S.S.E. direction for 2 miles, rounding low hills, then S.E. for 1¾ mile, when we crossed low hills and entered glen with grass. Camped at 5½th mile in glen, as we were not sure of finding grass further on. Brushwood and argols are fairly plentiful.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
July 6	Camp	Did not move owing to bad weather and heavy snowstorm (8 inches of snow fell).			
„ 7	Camp	Camp in valley	..	6¾	Up glen, steadily ascending for 2½ miles to top of ridge. From top gradually descended for 2¾ miles S.E. by S. into valley. Had to turn off to E.N.E. to avoid small salt-water lake for 2 miles. Grass scarce, brushwood plentiful. Another fall of 10 inches of snow.
„ 8	Camp	Camp in valley	..	9¼	Slowly feeling the way, marched along valley E.S.E. for 6 miles, then turned S.E. for 3¼ miles, and encamped by a nice patch of grass and brushwood. Suffering from snow-blindness.
„ 9	Camp	Camp in ravine	..	12½	Crossed valley and entered ravine in a S.E. direction at the 3¼rd mile. Marched up ravine with steady ascent S. by E. for 1¾ mile, and S.E. by S. 4¼ miles to top of pass. Descended gradually in a S.E. direction for 3¼ miles and encamped. Trying march, owing to deep soft snow on both sides of pass. No wood or grass, and the ground very wet.
„ 10	Camp	Camp in ravine	..	6	Short march down ravine in an easterly direction to a patch of short grass and brushwood. We are in a most difficult part of the country, a perfect sea of mountains. A stiff shower of hail in the early morning.
„ 11	Reconnoitred way across the latter part of the range, and succeeded in finding an easy pass, the 7¼th mile leading clear of the range along a broad and extensive valley, studded with lakes, a large lake lying in a S.W. direction. Made a trip across valley to low undulating hills, and struck at the 16th mile a large stream flowing in from the S.W. by S. and turning eastward. Returned to camp from the 23¼rd mile, having much brighter hopes of reaching the high road someway about Naichi very soon.				
„ 12	Camp	Camp in valley 3 miles E.N.E. of large lake.	..	11¾	S.W. by S. ½ S. for 3 miles, and entered another ravine. From its mouth turned S. by W. for 1 mile, S.W. by S. ¼ mile, and S.W. by W. ½ mile to top of easy pass; gradual ascent all the way. From pass descended in a southerly direction, with steady descent to the foot of ravine 2¼ miles, and entered on broad valley. From south side of range marched across valley S. ½ W. for 4½ miles, and encamped by a broad patch of grass and brushwood.
„ 13	Camp	Camp in valley by small sweet water stream.	..	4¼	A short march across valley, which now becomes undulating, S. ½ W. to a patch of grass and brushwood.
„ 14	Camp	Camp by small lake.	..	7	Across very low undulating hills in a nearly S.S.E. direction, along south side of valley, and encamped by strip of grass and brushwood on the verge of the lake. Scattered among the low hills are many sheets of water.
„ 15	Rested to-day, and observed for latitude. The mean of two observations is 35° 41′ 33″ N.				

„	Camp	Camp in valley by small sweet water stream.	..	4½	A short march across valley, which now becomes undulating, S. ½ W. to a patch of grass and brushwood.
„ 14	Camp	Camp by small lake.	..	7	Across very low undulating hills in a nearly S.S.E. direction, along south side of valley, and encamped by strip of grass and brushwood on the verge of the lake. Scattered among the low hills are many sheets of water.
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Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
July 16	Camp	Camp in valley near small lake.	..	9¾	An easy march across low hills into valley, twisting and turning a great deal to avoid the many lakes, making, however, a nearly easterly course. Grass and brushwood scarce. The lake nearly ½ a mile across.
„ 17	Camp	Camp in valley	..	7½	A short march into centre of valley, in a N.E. by N. direction, to clear the lakes and soft ground. Grass and fuel fairly plentiful.
„ 18	Camp	Camp in valley	..	9	Marched along valley in an E. ½ S. direction for 9 miles, and encamped by a patch of grass and brushwood. The ground very soft at starting, but improved at the end of 3rd mile, when the valley became more level and fertile. This is the rainy season in Mongolia.
„ 19	Camp	Camp in valley	..	8½	Continued along valley E. by S., and encamped by a long strip of grass; brushwood very scarce. After the 5th mile the valley becomes uneven and broken, with the ground soft and swampy in many places.
„ 20	Camp	Camp in valley close to low hill.	..	10	Continued along uneven valley in an E. by S. direction, crossing at the 3rd mile a large stream running south towards the middle of the valley, then turning easterly, and at the 8th mile came on a fresh track; footprints of many horses and mules, and a few human beings, coming from the mountains and going towards the south. This is the first track we have seen since we crossed the Altun or Korah-tagh range. Following the track for 1½ mile S.S.W., we came upon the camp fires of a party who had left this morning, and ½ mile further we encamped. Grass plentiful, fuel scarce, and water from small pools. Started to overtake the travellers, and after following their trail for 12 miles S.W. by S., came upon a band of Buddhist priests on their way to Lhassa. Ascertained from them that we are three marches in a N.E. by N. direction from the Naichi district.
„ 21	Camp	Did not move to-day. Visit from lama.			
„ 22	Camp	Camp in glen	..	10½	On leaving camp started once more for the mountains to the north to obtain supplies before marching south again. Crossed valley in a N.N.E. direction for 3 miles, then turned gently in a N.E. direction, entering at the 4th mile a narrow glen, and striking right bank of large stream flowing towards the south. Followed stream up glen, crossing and recrossing it for 3 miles. Grass plentiful, fuel scarce. A large caravan of pilgrims passed on their way to Lhassa.
„ 23	Camp	Camp at mouth of ravine.	..	11½	On leaving camp crossed stream and rounded shoulder of hill 1 mile E. by N. ½ N. Here the road turns N.E. by N. with gentle ascent for 5½ miles, recrossing stream at 2nd mile and leaving it flowing in from the north. Half a mile further N.W. by N. is the top

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Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
					of the pass, called by the pilgrims Anghir-takshia-dawan. From pass descended by narrow ravine N.N.W. for 2¼ miles, then turned in a N. by E. direction, with gentle descent, crossing and recrossing stream, for 2 miles to mouth of ravine, and encamped. Hill sides are green with moss, too short for ponies to graze upon. Saw over 10,000 female antelope with their young.
July 24	Camp	Camp at mouth of ravine.	..	8¼	Crossed stream flowing into stream from pass, which flows east, and crossed narrow valley 1 mile N.W. to foot of the Naichi-dawan pass. Ascending pass, which is steep and stony, for 1 mile N.N.W., reached the summit after hard work with baggage animals. From top very gradual descent for 2 miles N. ½ W., and for the next 3 miles rather steep descent in the same direction. Here the descent becomes gradual, and the road turns N. by E. ½ E. Grass very plentiful, shrubwood a mile lower down. Road fairly good, but soft and slushy, owing to melting snow. 3 inches of snow fell last night at camp. Antelope in numbers on south side of pass.
„ 25	Camp	Camp in Naichi valley.	..	2½	Left ravine and entered valley 3 miles broad, 1 mile N.N.E. to mouth of ravine, then N.E. by E. ½ E. for 1½ mile, crossing stream from pass, and encamping ½ a mile below junction of this stream with the Naichi-gol river. Grass, shrub, and brushwood very plentiful.
„ 26	Turki servants and donkey men refused to accompany them south.				
„ 27	Mr. Carey started with three servants for Golmo to try and purchase provisions from the nomads encamped there. Golmo is 100 miles from here, but there is a road across the mountains 20 miles nearer. Mr. Dalgleish remained with the rest of the caravan in the Naichi valley. Not finding all he wanted at Golmo, Mr. Carey went on to Bhaga Tsaidam and Hoiduthara. He was, however, unable to procure the necessary supplies, and wrote to Mr. Dalgleish to join him.				
Aug. 28	Camp in Naichi valley.	Camp at foot of Sosani pass.	..	15¼	Marched along valley in a N.E. by E. ½ E. direction for 7½ miles to foot of mountains on north side of valley, crossing and leaving river at 5½th mile. Here entered broad ravine, carpeted with scrub and brushwood. Road is stony, with a steady ascent in a northerly direction for 5¼ miles, then turns E.N.E. to the 15th mile, entering narrow gorge. Brushwood and scrub fairly plentiful, little or no grass.
„ 29	Camp	Camp in ravine.	..	9½	A stiff march across the Sosani-dawan Pass. Ascent and descent 4½ miles, steep and stony. From foot of pass descended gradually down ravine for 5 miles, and encamped by a fine patch of grass on hillside; brushwood fairly plentiful. The road zigzags a good deal, making a nearly northerly course.
„ 30	Camp	Camp Toraling	..	11½	Continued down ravine for 3¾ miles N.N.E., then turned in a N.N.W. direction to camp. For the first 6 miles the road is stony and bad, crossing and recrossing six times.

„ 29	Camp	Camp in ravine.	..	9½	A stiff march across the Sosani-dawan Pass. Ascent and descent 4½ miles, steep and stony. From foot of pass descended gradually down ravine for 5 miles, and encamped by a fine patch of grass on hillside; brushwood fairly plentiful. The road zigzags a good deal, making a nearly northerly course.
„ 30	Camp	Camp Toraling	..	11½	Continued down ravine for 3¾ miles N.N.E., then turned in a N.N.W. direction to camp. For the first 6 miles the road is stony and bad, crossing and recrossing six times.

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					Here the ravine widens, and the dark, bold mountains soften down into a sandy colour, with a good road—steady descent all the way. Little or no grass; scrub on banks of stream.
Aug. 31	Camp Toraling	Camp near right bank of stream at foot of the mountain.	..	12¾	Shortly after leaving camp, crossed again stream called Tora-gol, and marched along foot of mountains to camp. For the first six miles the road, which is good, runs in a nearly N.N.E. direction, then turns E.N.E. Grass scarce; belt of shrub on river banks. We are now fairly north of this grand range of mountains, the Kuen Luen, and instead we have a vast undulating sandy desert striking away to the north. From our camp in Naichi we have descended 1700 feet.
Sept. 1	Camp	Camp Harmugin Namgha.	..	12½	In Thaichinar valley. Ascended sandy mound and marched over desert N.E. by E. ½ E. for 3 miles. Still going in the same direction, entered a large patch of shrub and reedy grass, which continues to nearly the 11th mile, when the pasture lands of the Thaichinar Mongols are entered. From the 6th mile the road turns nearly E. by S. There are over 100 nomad tents dotted over this extensive valley, with large numbers of cattle, sheep, goats, and ponies. Meeting between Messrs. Carey and Dalgleish here, after an absence of 37 days, Mr. Carey having returned from Tenkalik with several loads of barley and a little sattu.
„ 2	Shifted camp ¾ mile, and remained here till the 4th, receiving visits from the nomads and sick people.				
„ 4	Left the nomad camp at Thaichinar and reached the Naichi valley on the 7th inst.				
„ 8	Left the Naichi valley and reached the left bank of the Chu-mar (Ma-chu) on the 11th inst. viâ the Naichi and Anghirtakshia dawans (passes), to the foot of the range, then across the extensive valley, the northern boundary of the Chang Thang for 19 miles.				
„ 12	Left Chu-mar (Ma-chu) and returned to the Naichi valley on the 15th inst.				
16 to 18	Rested in the Naichi valley to allow the ponies to recruit on the good grazing that is here.				
„ 19	Left the Naichi valley and reached again the nomad camp in the Thaichinar valley on the 23rd inst. The nomads are now beginning to move further east.				
24 to 25	Rested at our old camp. On the 25th got everything ready for a start to Sachu (Sha-chau) to-morrow.				
„ 26	Camp	Camp on left bank of Toragol.	..	10½	The road, which is fairly good, passes over a very saline soil with scanty vegetation, in an E. by N. direction along the valley, and crosses the stream at camp. Vegetation improves on nearing the banks of the Toragol, and on its banks there is a fine belt of shrubbery with bushes bearing red and black berries, and a fair patch of reedy grass. Water scarce, as the river is nearly dry.
„ 27	Camp	Camp Hodja Gor Namgha.	..	9½	On leaving camp parted with the Toragol stream, which flows to the north for about 10 miles and becomes lost in the sand. The road, which is fairly good, runs in a

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					nearly N.W. direction across the valley, and near a line of low sandy hillocks. The soil is still very saline. Reedy grass fairly plentiful, and a few shrubs. Water from small spring.
Sept. 28	Camp	Camp on right bank of Zokha-gol.	..	14¾	Continued along valley in a W.N.W. direction over saline soil with patches of shrubbery and reedy grass. Water from spring in bed of rivulet, which is more of a swamp.
„ 29	Camp	Camp Yetka	..	13	On leaving camp crossed Zokha-gol (a swamp with a foot of soft mud), and continued along valley in a N.W. by W. ½ W. direction over saline soil, with shrubbery and reedy grass 2 feet long in places where the soil is not so saline. Water very scarce and brackish.
„ 30	Yetka	Camp on right bank of Horghway-gol streams.	..	7½	A short march along valley in a N.W. direction over very saline soil and scanty vegetation until near the stream, which is very muddy. The valley to the north is very desolate and barren, while to the south are very arid sand hillocks. Grass and wood plentiful round camp. Observations for latitude gave this as 36° 47′ 2″.
Oct. 1	Camp	Camp Torol Namgha.	..	12½	On leaving camp crossed Horghway-gol and continued along valley in a W. by N. direction to avoid bad ground up to the 8th mile, then turned to N.W. over saline soil with thick patches of shrubbery and long reedy grass from 2 to 5 feet long. Grass and wood plentiful for several miles round camp.
„ 2	Camp	Camp Hajjar on left bank of Otto Mairin-gol (Utu-mur-ren-gol) stream.	..	14¼	Direction W. by N., following valley over saline soil with thick shrubbery to the 10th mile, when the pasture lands of the Hajjar Mongols are entered. At the 7½ mile crossed the Nairin-gol stream, at present shallow, and on reaching camp crossed the Otto Mairin-gol (Utu-murren-gol), 1 foot deep and 10 paces wide. Hajjar is the name given to the pasture lands of this part of the valley, which extends for several miles to the W. and N. of our camp. The Hajjar nomads, numbering over 100 tents, are encamped about 2 miles to the W. of our camp. The pasturage is coarse, reedy grass growing on saline soil. Shrub and scrub wood have disappeared round camp, making fuel very scarce. The road is good at this time of the year, the swampy parts being hard and dry.
„ 3	Hajjar	Rested to-day, and observed latitude 36° 55′ 34″.			
„ 4	Hajjar	Camp on left bank of the Patagonto-gol (Baty gantu).	4	4½	March in a half circle. Lat. observed 36° 57′ 51″.

„ 3	Hajjar	Rested to-day, and observed latitude 36° 55′ 34″.			
„ 4	Hajjar	Camp on left bank of the Patagonto-gol (Baty gantu).	4	4½	March in a half circle. Lat. observed 36° 57′ 51″.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
Oct. 5	Camp on left bank of Pataganto (Batygantu) gol.	Camp Toraling on left bank of Patagonto gol.	..	10¾	Followed the left bank of the stream to camp in an E. direction for the first 3 miles, then N.E. by E. Good road all the way. Coarse reedy grass plentiful, shrubs and scrub wood scanty. The Patagonto (Batygantu) gol is about 200 paces wide, and in summer is 2 feet deep. From what I can learn from the nomads, this is same stream that we followed from June 16th from its source on to Bokalik, and eastwards to Bulantai 29th June, and which I followed for another 15½ miles into the mountains before turning south from Bulantai.
„ 6	Camp	Camp Bartik on right bank of the Holl river.	..	14¾	On leaving camp parted with the Patagontu (Batygantu) gol and marched across valley in a N.E. by N ½ N. direction over a bad road with very saline soil and swampy in several places. At the 11¾th mile struck the Holl river and marched along its right bank to camp. There is a nice patch of grass on the river bank, and shrub wood plentiful growing on sandy mounds.
„ 7	Camp	Camp on small island in the Holl river.	..	8	A short march along the right bank of the river in a N.N.E. direction. The road for the first 4 miles runs among sandy mounds covered with shrubs in a semi-decayed state, then opens out into a fine patch of grazing land. The soil continues saline. At the 5th mile, and just before reaching camp, crossed two channels of the river, which becomes a kind of delta here. Lat. 37° 16′ 34″.
„ 8	Camp	Hajjar Zakha	..	9¼	Crossed the Holl river 2 feet deep, with a very soft and muddy bottom, and continued across valley in a N. by E. ¼ E. direction, twisting and turning over a bad, soft, and sandy road, and on reaching camp found the small stream from the river dry. Vegetation now becoming scanty, still around camp there is a fair amount of grass and shrub wood, and here there is a nomad camp in spring. This is the northern Hajjar frontier.
„ 9	Hajjar Zakha	Camp among sand mounds in desert.	..	21	Took supplies of water preparatory to two days' marching without water. At 6th mile left all traces of vegetation and entered on the desert. Between the 9½th and 10th mile crossed a large bed of caked salt with a few inches of brine on the top and soft sand underneath. At the end of this bed of salt (which extends for many miles E. and W.) entered and ascended a range of sandy hills running E. by S., and continued across them with slight undulations to camp. The course to-day is about N.E. by N. ¼ N. All is desolate for many miles round camp. No wood, water, or grass. The numberless sandy mounds among the hills resemble large tombs, while the soil has become a kind of concrete.
„ 10	Camp	Camp in desert.	..	26	Started early this morning across the undulating sandy hills in a N.E. by N. ½ N. direction to the 20½th mile, when it turns to E. by N., twisting and turning among the sandy mounds. At the end of the 12th mile ascended for ¾ of a mile to higher

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					sandy mounds, which gradually dwindle away 4 or 5 miles from camp. The road throughout is fairly good, but the many slight ascents and descents are trying on the ponies. Another desolate camp: no water nor sign of vegetation. We are now nearing a ridge of mountains, probably the same range that we passed between Kara Cnoka and Mulli Korgan. Water and vegetation is now not far off.
Oct. 11	Camp	Makhai Zakha	..	6¼	A short march across valley in an easterly direction over soft saline soil to the southern frontier of Makhai or Makha, and to good grazing and fresh water. At the 4¼th mile crossed stream from the mountains now become salt, and 2¼ miles lower down valley forms a small lake; crossed another stream shortly before reaching camp. The streams in this part of the valley run in a north-westerly direction.
„ 12	Makhai Zakha	Camp Makhai on right bank of the Makhai-gol.	..	9¼	Marched across valley over saline soil, soft in many places, twisting and turning over a bad road to avoid the swamps. Crossed the Makhai-gol, a small stream a few paces wide, with a foot of water flowing from the mountains, and encamped. Grass and shrubwood fairly plentiful. Our last camp (Makhai Zakha) S.W. from here. There are 20 or 30 tents of nomads scattered over the valley.
„ 13	Camp Makhai	Sho-woto in valley near foot of mountains.	..	7¼	A short march across valley in a N. by W. direction, twisting and turning over a soft saline soil. At the 1¾st and 3¾rd mile crossed a small stream which, together with the Makhai-gol, flow into a large lake 3¼ miles W.N.W. from camp. The lake is called Chaghan Tolghai-nor. Water fowl in great numbers about the swamps preparing to migrate to a warmer climate. Grass and shrubwood fairly plentiful. The centre of the Makhai district is about 8 miles E. by N. from yesterday's camp.
„ 14	Sho-woto	Camp Shushik at foot of the mountains.	..	13¼	Continued across valley in a N.W. by N. direction over a good road slightly stony to the 11¾th mile, when the road turned to N. ½ W. to the 13th mile. From here touched the hills and entered them N.E. by N. No wood; grass and water scarce. There is a gradual rise from the 9¼th mile.
„ 15	Shushik ..	Camp Kutil (Kotal) Amun.	..	14¼	Followed narrow passage in sandy hills N.E. by N. ascending gently for 2¼ miles. At end of 2nd mile passed small spring, a little brackish. Shrubwo. d and grass rather scarce. From here entered a barren valley and marched across it N. by W. for 5 miles. entering narrow ravine in the mountains, which are arid and barren. Four miles further N.N.W., with a gradual ascent, reached top of the Maklai Kutil (Kotal) Pass. From pass descended gradually for 3 miles N.W. by N. ¾ miles, then turned to N.E. and to N. ½ W. and encamped. No water or grass; brushwood plentiful on the N. and S. side of ravine. Instead of water, patches of new snow.

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Oct. 16	Kutil (Kotal) Amun.	Kuku (Koko) Bashing Taen Ekin.	..	13½	Left ravine and descended into extensive valley lying in an E. by N. direction. At the 8th mile reached grass and very swampy ground for the last mile and a half before encamping. Tents of nomads scattered about. We are now in the Sirthang district. Grass fairly plentiful, no wood.
„ 17	Kuku (Koko) Bashing.	Ulan Gazar (Ulan-gadjir)	..	4	A short march across valley for the first mile over very swampy ground N. by E. From here the road turns N.W. and becomes dry. About ¾ mile N. by E. from yesterday's camp is the nomad camp Chaga Namgha, and here we joined the road from Igi Tsaidam and Urel. I learn there are about 300 tents in the Sirthang district, and to-day we passed many tents E. and W. of the road, with herds of sheep, goats, camels, ponies, and several yaks. Grass fairly plentiful, no wood.
„ 18	Ulan Gazar (Ulan-gadjir)	Bhaga Nairin	..	6½	Marched across valley in a N. ¾ W. direction for 6½ miles, and halted for the day. The road is good throughout the march, but the soil very saline in places. Grass fairly plentiful, but no wood, only animal dung for fuel. The small Gonpa (i.e. monastery) at Yempin, called "Karim Goma," lies west from camp about 4 miles. Yempin is called Yembi on the chart.
„ 19	Bhaga Nairin	Sair Gotto ..	..	5¼	Marched along valley in an E.N.E. direction for 4¼ miles to avoid swampy ground, then turned N. by W. for 1 mile near the northern edge of the grass in the valley. Grass plentiful, no wood. A supply of flour and grain obtained from the nomads. This grain costs a rupee per 15 lbs., and the flour a rupee per 9 lbs., and is brought from Sachu.
„ 20	Sair Gotto ..	Camp on north side of Tawan Bulgan Kotal Pass.	..	22¼	Left camp, and marched across valley, now barren, in a N.E. by N. direction, with gentle ascent from the 3rd to the 12¾th mile, when we entered ravine in the mountains. From mouth of ravine the road lies N.E. by N. for 2 miles, then turns N. by W. to the 21¼st mile; half a mile further N.E. by N. is the top of the Tawan Bulgan Kotal Pass. From the pass descended gradually N.E. by E. ¾ of a mile, and encamped. At camp there is a little grass and brushwood, no water except by melting snow. Road excellent throughout, with a steady ascent from mouth of ravine to top of pass. Small lake lies W. ¼ S. from the end of the 6th mile.
„ 21	Camp	Camp Tam Bulak.	..	13½	Descended gradually for 3¼ miles (N.E. ½ E. 2 miles, then N. by E. 1¼ mile), and entered glen leading to second pass in a N. by W. ½ W. direction for 2 miles, and N. by E. ½ E. ¼ mile to top of the Kupchiling Kotal Pass, which has a steady ascent of about a mile. The road from camp to top of the pass is good. From pass a sharp descent into stony gorge, twisting and turning in a N.N.W. and N.N.E. direction to near the mouth of gorge over a bad and stony road, with steady descent. At 10¾th mile leave gorge

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					(and you might say the mountains, as they now dwindle down to sand-hills), and enter an undulating valley, thickly covered with long grass and brushwood for 2 miles N. ½ W.; ¾ of a mile further, N. by E. ½ E., is camp, Tam Bulak, nicely sheltered among sand-hills, where flows a spring of fine water and a small stream. Grass, shrub, and brushwood plentiful.
Oct. 22	Tam Bulak..	Hoyur Aliassai	..	14	Left the mountains, and marched across plain in a N. ½ W. direction, and encamped by a dry stream. Brush and scrub wood plentiful all over the plain; no grass nor water. Road fairly good, with gentle descent to the 9½th mile.
„ 23	Hoyur Aliassai	Kokcha Borgosun, on right bank of Danga-gol.	6700	10	Continued across plain in a northerly direction over a good hard road with small stones, and forded the Danga-gol river at camp, 2 feet deep and 200 paces wide, with high sandy banks. Grass scarce; shrubs fairly plentiful along the river banks, and at camp there are three fair-sized trees, with a group of smaller ones.
„ 24	Kokcha Borgosun.	Chinja Benla village.	5820	12½	Parted with river at camp, and marched across plain in a N.W. by N. direction for 2¾ miles to foot of high sandy hills; ascended these hills, and marched across them in a nearly N.N.W. direction, with steep ascent and descent to the 12th mile, when we once more entered on large plain, and struck the Danga-gol, and crossed one of the channels. A quarter of a mile further reached the western end of the Chinese village of Chinja Benla, and encamped. This is the first cultivation we have seen since leaving Chaklik six months ago. The farm people are all Chinese, and very civil they have been to us since our arrival. The road over the hills, owing to the soft and yielding soil, was very heavy and trying for the baggage animals.
„ 25	Chinja Benla	Saitu, Sachu, or Shachau city.	5225	8½	A pleasant march through cultivation in a N.E. by N. direction, following the left bank of the Danga-gol, brought us within hail of Sachu.
„ 26	Rested at Sachu the bridge across the river, to and from the city of Sachu, lies 1 mile N.E. from camp, and the centre of the city lies about 1½ mile N. by E. ½ E. from camp.				
			SECTION V.		
„ 27	Sachu	Camp on plain	..	12½	Settled everything this morning, and started on the march by 11 A.M. On leaving camp crossed the Danga-gol, at present nearly dry (as the water is run off on to the fields), and entered the city. At the 1½th mile passed from the city by the east gate on to the

1¼ mile N. by E. ½ E. from camp.

SECTION V.

„ 27	Sachu	Camp on plain	..	12¼	Settled everything this morning, and started on the march by 11 A.M. On leaving camp crossed the Danga-gol, at present nearly dry (as the water is run off on to the fields), and entered the city. At the 1¼th mile passed from the city by the east gate on to the

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					high road, and after marching for 11 miles encamped. On both sides of the road there is cultivation for 4½ miles, when the cultivated tract to the south of the road ends, but continues on the north. Road good, runs in an E. by N. direction from city.
Oct. 28	Camp	Gudak Jingzo 1st stage.	..	5½	At camp left cultivation, and a short march along plain over saline soil brought us to the first rest-house at Jingzo, consisting of a small bungalow and a few rest houses for servants. Vegetation is now becoming scanty. Water from well, wood from man in charge of rest-house.
„ 29	Gudak Jingzo	Taustphi on plain at foot of hills, 2nd stage.	..	15	Marched along plain over a good road in an E.N.E. direction to 2nd stage, and encamped. Grass and scrub fairly plentiful near the rest-house. Water from well. After leaving cultivation water becomes scarce, and the extensive plain in many places an arid waste. This rest-house is in the same style as the last one, and at both they have a Joss-house full of fantastic stucco idols, gorgeously painted and with droll expressions.
„ 30	Taustphi ..	Khwaja at foot of hills, 3rd stage.	..	15¾	Continued along plain (now become an arid waste) N.E. by E. ½ E. to a rest-house partly in ruins, and a small fort and tower called Lu Sogolong, 9½ miles from 2nd stage. Crossed here small stream from the hills with a fair belt of reedy grass and scrub wood. 6½ miles further along plain, in about the same direction, is Khwaja, near the edge of vegetation. Road good all the way.
„ 31	Khwaja ..	Camp under western wall of Nainshe city.	..	14	Marched across plain in a nearly N.E. by N. direction to small Chinese town, Nainshe. From 2nd mile to 9½th mile passed through cultivation and crossed two canals. From here entered again untilled land until near the city, where there is fair cultivation. Crossed two more canals on the latter part of the march. Road fairly good all the way. All along this march the plain is dotted with abandoned forts, fast falling into ruin. Nainshe, like Sachu, is surrounded by a mud wall, but much smaller, and is partly in ruins.
Nov. 1	Nainshe ..	Ba Tinza on plain among low hillocks, 5th stage.	..	2¾	A long march across plain in a nearly N.N.W. direction. Road good. Country a barren waste. At the 16¾th mile passed an encamping ground with two or three rooms dug out in the hollow of a rock, but at present there is no water, nor is there any grass or wood. From here the plain becomes undulating with low hillocks. This stage has six serais or rest-houses, and two or three small shops, but everything is very dear. The travellers' rest was disturbed by the arrival of a party of convicts who wished to share the same room with them.

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Nov. 2	Ba-Tinza ..	Hong-lu-yin 6th stage, among low hills.		17½	Across undulating plain in a N.W. by N. direction to the end of 12th mile. From here entered a range of hills and marched across part of the range by a glen with gentle ascent in a nearly N.N.W. direction to rest-house. Road good, country an arid waste.
„ 3	Hong-lu-yin	Da-chen, 7th stage, in valley.	..	19¼	Across undulating hills for the first 3 miles in a northerly direction. From here the hills dwindle down into undulating valley, and the road turns more N.N.W. At the 12¾th mile passed a single house and serai with a fair patch of reedy grass and brushwood. Road good; from Nainshe we have been on high road between China and Turkestan.
„ 4	Da-chen ..	Ma-lung-Jingzo, 8th stage, in valley.	..	16½	Across valley in a N. by E. direction for 12½ miles to round hill, then turned N. by W. ½ W. to stage, which has a fair rest-house and two serais. Road good. Vegetation very scanty. Grass and wood at famine prices.
„ 5	Ma-lung-Jingzo.	Shing-shing-she in ravine, 9th stage.	7900	18¼	Continued to cross valley in a N. W. by N. direction for about 6 miles. From here entered hill country in about the same direction, with gentle rises and falls to camp. Road good. Vegetation very scanty. Housed with convicts in one of the serais to pass the night—a most goodly company.
„ 6	Shing-shing-she.	Iswa Chenza, 10th stage, in undulating valley.	6300	20¼	A long march across hilly country to rest-house. At the 1¾th mile passed a pagoda nicely built on top of a hill, and at the 12th mile an old rest-house now in ruins. Road good, but a little stony in places. Vegetation still very scanty in places. Weather clear and cold. Road lies over low undulating hills for the first 5½ miles.
„ 7	Iswa Chenza	Kosthphi, in plain, 11th stage.	..	17½	From here, which may be fairly called the easternmost verge of Chinese Turkistan, an extensive plain, perfectly waste, is entered. Road good. Rest-house in ruins, with no supplies. Water brackish.
„ 8	Kosthphi ..	Yen Dung, 12th stage, in plain.	3750	30	A long march across undulating plain, arid and barren. At the end of the 16th mile rested for four hours near an abandoned rest-house, called Kai Binza (4450 feet), and then went on to Yen Dung, where we were able to get grass and wood at very high prices. Road good, with gentle descent throughout, more perceptible from end of 20th mile.
„ 9	Yen Dung ..	El-Timar, 13th stage.	3840	15	Ascended gently for the first ½ mile, then continued across undulating plain, reaching vegetation at the end of 12th mile, and a little cultivation at the rest-house. The march from Nainshe across this broad belt of waste has been very trying on the ponies. They have all, however, reached their native Turkistan, though two or three of them are much done up.

Date.	From	To	Elevation.	Distance.	Remarks.
			feet.	miles.	
1886. Nov. 10	Rested to-day at El-Timar. The rest-house crowded with Muhammadans from Hami, who have come to see their Wang off on his way to China. Another range of mountains stands out boldly several miles to the north of camp.				
„ 11	El-Timar ..	Kara Khodja, 14th stage in plain.	..	15	Continued across plain, now level and covered with coarse reedy grass right up to rest-house. Had a light [illegible] snow. Rest-house in bad repair. There are also three serais and a very small bazar. All the rest-houses and serais along the route are in the hands of the Chinese.
„ 12	Kara Khodja	Hami or Hamul, 15th stage.	3600	15½	Road lies over plain covered with reedy grass to the village of Kara Mukchi (3½ miles), with about fifty houses and a nice strip of cultivation. At the 5th mile entered a strip of waste land extending to the 8½th mile. Here again entered on cultivation and pasture land extending nearly to the 15th mile, when we crossed stream and entered waste land to east end of city. In the evening two young Russian traders and a Belgian in the Chinese service paid us a visit.
	Rested at Hami from the 12th to the 22nd November.				
„ 22	Hami	Sim Kargha, 1st stage.	..	17½	Left Hami en route for Turfan. The road, which is good, continues along plain covered with reedy grass to rest-house. Passed two fresh springs of water; supplies to be had at rest-house at very high prices. From here there is a straighter and nearer road to Turfan, but it is very seldom used, owing to the long strip of desert, void of wood, grass, and water, that has to be crossed, and the fierce winds that prevail for several days together.
„ 23	Sim Kargha	Tograchi, 2nd stage in plain.	..	15	The road, which is good, continues along plain covered with reedy grass to the 4½th mile, where there is a small fort and village with good cultivation. From here vegetation becomes scanty to the 11th mile, when cultivation begins anew, and continues to rest-house. Crossed two small streams which rise from springs. Supplies plentiful here at high prices.
„ 24	Tograchi ..	Jigda village, in plain.	..	12¼	The road, which is good, continues along grassy plain running with the mountains. At the 1½st mile left the high road and kept a little nearer the mountains to reach this village, where supplies are to be had at more reasonable rates than at the rest-house of the 3rd stage; and as you enter a long strip of desert from here, supplies have to be taken from Jigda village. The name of the 3rd stage is Taranchi, and lies S.W. ½ W. 4½ miles from Jigda.
„ 25	Rested to-day.				

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	
Nov. 26	Jigda	Urdak lik, in plain.	..	13¼	Left village, and continued along plain now almost bare of vegetation, striking the high road at the 5½th mile, and encamped by an old rest-house, where reedy grass and water are plentiful, but wood scarce. There is a patch of cultivation, but only one Chinaman resides here.
„ 27	Urdak lik ..	Sarik Kumish	..	13¼	Left the half-way house, and marched over plain, now undulating and scantily clothed with vegetation. At the end of the 10th mile reached the 4th stage, Lo Dhung, with spring. 1¼ mile further brought us to two roads running to Turfan. The one nearest the mountains is the high road, with rest-houses; the other is the old road, and is shorter by one march. We have chosen the shorter, and will pitch tents. Road good, but stony. Coarse grass plentiful at camp, water a little brackish, wood not over plentiful. In the distance to the south a range of low hills looms out.
„ 28	Sarik Kumish	Shilder Kumish in small glen.	..	12	A stony barren waste extends to the 8½th mile, with gentle descent all the way. From here entered low undulating hills (off shoots from the mountains), with gradual ascents and descents to camp, where there are the remains of an old rest-house, with a narrow strip of reedy grass and a spring slightly brackish. No fuel.
„ 29	Shilder Kumish.	Camp among low hills.	..	28¾	Continued across low undulating hills, with gentle ascents and descents. The whole plain is now composed of these undulations, which are arid and barren in the extreme, and very stony in places. At the 19th mile reached a rest-house called Otta Gaima, now in ruins, with a small patch of grass and a spring of brackish water. Rested here until 7 P.M., when we made another march of 2¾ miles still over the same undulating hills, and encamped for the night.
„ 30	Camp	Camp in valley	..	28¼	Another long march across low undulating hills and glens, passing at the 19¼th mile a rest-house, now in ruins, with a little grass and a well of brackish water. At camp there is a small patch of reedy grass and spring, but no wood. Road good but stony; country a barren waste.
Dec. 1	Camp	Village of Chiktem.	..	25¼	Another long march over the same kind of country. At the 6¼th mile found an old rest-house, and another at the 10¾th mile, both in ruins. At the end of the 18th mile left the desert and entered on a long belt of reedy grass. Soil saline. At the 22nd mile struck again the high road.
„ 2	Chiktem ..	Korgha Utra	..	16¼	Marched along valley with low undulating hills to the south of road, passing at the 3½th mile and 6¼th mile two small villages. Road excellent, with reedy grass on both sides of the road for most of the way. There is a small patch of cultivation with two houses.

Date.	From	To	Elevation.	Distance.	Remarks.
1886. Dec. 3	Korgha Utra	Pichan, 9th stage.	feet. ..	miles. 8	In valley with mud hills on south side of road. A short march along valley with gentle descent, entering cultivation at the 5th mile, where there are two small forts. Pichan or Pachan is a large struggling village with several miles of cultivation. The bazaar is inside a mud fort. Population, Turks, with a number of Tunganis and Chinese.
„ 3	Pichan ..	Lemstin or Lemyin, 10th stage.	..	15¾	In valley with high sand hills on south side of road. Half a mile from Pichan crossed a small stream, at the end of 2nd mile left cultivation and entered barren waste with gradual ascent to the 5½th mile. From here the road descends gently to stage and enters cultivation again at the 12th mile, crossing two small streams at the 10¾th and 13¾th miles. Lemyin has a large patch of cultivation and many farm houses.
„ 5	Lemyin ..	Suigim, 11th stage.	..	10¾	At mouth of gorge. On leaving Lemyin crossed stream and soon entered on barren waste to nearly the 9th mile, when cultivation again begins, and extends for several miles along valley, with many farm houses. At the 12½th mile passed a single serai, and at 14th mile left the valley and entered the sand hills by gorge. There are only two or three serais here.
„ 6	Singim ..	Turfan, 12th stage.	..	19	Left mouth of gorge and entered valley, an arid waste, but to the S. and S.W. of road there is a large extent of cultivation. At the 12½th mile joined the high road from the city of Lukching, and entered cultivation at the 15¾th mile. On nearing Turfan the road runs through ruins of an old city, and passes a large tomb with pillar 200 feet high. At 17¾th mile reached east wall of the Chinese town, and 1½ mile further reached the Muhammadan city, which we entered, and put up in a trader's serai.
„ 7 and „ 8	Rested at Turfan and reduced our caravan, paying off part of our Turkish servants, and also cashed several currency notes at a very heavy discount. Turfan, like Hami, is near the southern slopes of the Tian Shan, and is one of the largest towns of E. Turkistan. Climate very hot in summer and cold in winter. Water is produced from wells chiefly, and irrigation is carried on by means of underground canals.				
„ 9	Turfan ..	Dah-din ..	..	16	Left Turfan this morning, and continued along valley over a rough and rather stony road. Country the most of the march a barren waste. At the 3rd and 4¾th mile crossed small streams, and a third on reaching rest-house, which is situated in a barren waste, with only a little coarse scrub. Wood and grass sold at the rest-house, but no other supplies to be had.
„ 10	Dah-din ..	Tokhtasun ..	..	14½	Shortly after leaving Dah-din the valley becomes fertile, reaching cultivation at the 12th mile. At the 10½th mile strike stream, and follow it to the 14th mile, where it is crossed by small bridge. Tokhtasun, a small town within mud wall fort, has a fine

					the desert and entered on a long belt of reedy grass. Soil saline. At the 22nd mile struck again the high road.
„ 2	Chiktem ..	Korgha Utra	..	16½	Marched along valley with low undulating hills to the south of road, passing at the 3½th mile and 6½th mile two small villages. Road excellent, with reedy grass on both sides of the road for most of the way. There is a small patch of cultivation with two houses.

Date.	From	To	Elevation.	Distance.	Remarks.
1886.			feet.	miles.	tract of cultivation, with many farmhouses dotted over the tilled land. Population, Turks, with a large body of Tunganis and Chinese. Good road all the way. Put up in a small serai for the night.
Dec. 11	Left serai, and put up in the Bey's house, and rested for the day.				
„ 12 to 16	Tokhtasun ..	Urumtsi ..	..	95¼	Left Tokhtasun on the 12th. Ascending gently for nearly 29 miles in a northerly direction, entered the southern slopes of the Tian Shan mountains. At the 47½th mile passed the small town of Daivan Chin, inside a mud fort in bad repair. Wheat and barley cultivation extensive. Population, Tunganis, with a few Chinese and Turks. From Daivan Chin travelled along valley for 33½ miles W.N.W., then entered low undulating hills to Urumtsi, 14½ miles in a N.W. direction. Reached Urumtsi on the 16th, and put up in a house kept by a Chinaman. On the 18th called on the Joshwai, the governor-general of Turkistan.
„ 24 to 27	Urumtsi ..	Tokhtasun ..	..	95¼	Left Urumtsi on the 24th, and returned to Tokhtasun on the 27th.
„ 28	Rested at Tokhtasun.				
„ 29	Tokhtasun ..	Su Bashi ..	..	12¾	Left Tokhtasun and crossed valley, with gentle ascent to the 12½th mile. From here descended a few feet into gorge with small stream. No vegetation. Grass and wood sold at rest-house.
„ 30	Su Bashi ..	Eghar Bulak, in ravine.	..	15	Followed stream up ravine, with gentle ascent to end of 6th mile. From here the ravine or gorge closes in, and becomes stony. A steady ascent to rest-house. The stream comes bubbling out of the ground at the end of 6th mile. No wood or grass. Supplies to be had at rest-house.
„ 31	Eghar Bulak	Kumish ..	..	28	Continued up stony gorge with steady gradual ascent for 8½ miles to top of easy pass. From pass descend gradually down ravine, and passing at the 13½th mile a small rest house called Uzma Dhung. The descent now becomes more gentle, and the hills dwindle down as you enter valley at the 17th mile. Kumish has 3 serais, a small mazar and sheikh, and a small patch of cultivation and thick scrubwood.
1887. Jan 1	Kumish ..	Kara Kizil ..	..	18	Marched along valley for 13¾ miles to foot of mountains, entering these by a good road to the stage in ravine. The rest-house here is also a frontier post, where all travellers and goods are examined by a Chinese official. Water from well; no grass; scrub fairly plentiful among the defiles.
„ 2	Kara Kizil ..	Ushak Tal ..	..	28½	From Kara Kizil ascended gently for 2 miles to top of defile through the mountains, and after 1 mile further of gentle descent, entered valley and marched along it to stage,

1887.					mazar and sheikh, and a small patch of cultivation and thick scrubwood.
Jan 1	Kumish ..	Kara Kizil ..	..	18	Marched along valley for 13¾ miles to foot of mountains, entering these by a good road to the stage in ravine. The rest-house here is also a frontier post, where all travellers and goods are examined by a Chinese official. Water from well; no grass; scrub fairly plentiful among the defiles.
„ 2	Kara Kizil ..	Ushak Tal ..	..	28½	From Kara Kizil ascended gently for 2 miles to top of defile through the mountains, and after 1 mile further of gentle descent, entered valley and marched along it to stage,

Date.	From	To	Elevation.	Distance.	Remarks.
1887.			feet.	miles.	
					keeping close to the mountains all the way over a good road. At end of 14th mile passed a single house, used as a half-way house, called Sha Shinza. Ushak Tal is a small village, with a long belt of cultivation, a small bazaar, several serais, and a small fort. Population, Tunganis, Kalmaks, and a few Turks. About 15 miles to the south is Baghrash Kul, a large lake, frozen over in winter.
Jan. 3	Ushak Tal ..	Tavilgo ..	..	21¼	Continued along valley, passing fort just after leaving stage, and crossing at the 1st mile a small stream. At the 10½th mile passed the small village of Chukur, and at the 15¼th mile entered grass and shrub, with patches of forest to rest-house. At 16¾th mile passed Togarchi, a very small village, and crossed small stream at the 20½th mile, and another large stream on reaching Tavilgo. Road fairly good all the way. This part of the country, from Ushak Tal to Karashahr, and its surroundings, as well as a tract to the north of the mountains, belong to the Kalmaks, who, though nomadising in their habits, also cultivate extensive patches of land. Tavilgo is situated in the valley, covered with long reedy grass, and has only a few rest-houses and cook-shops for travellers.
„ 4	Tavilgo ..	Karashahr ..	..	20¼	Marched across valley covered with long grass and one patch of jungle. At 15½th mile reached cultivation, and crossed five canals by small bridges en route to the city. The belt of cultivation extends east and west, and the land is tilled by Tunganis and Kalmaks.
„ 5	Karashahr ..	Shorshuk ..	..	*13¾	On leaving Karashahr crossed river 200 yards wide, over the ice, and continued along valley, perfectly flat and covered with grass. This is the home of a large body of Kalmaks engaged in pastoral pursuits. At 5th mile passed Kalka Mazar, and at 7th mile Dhung Zil langar, a kind of half-way house. A little to the left of Dhung Zil are the ruins of the old city of Karashahr (*ante*, p. 28), and from the langar the country becomes an arid waste. Shorshuk has only a few rest-houses and serais for travellers, with a little scrubwood and grass.
„ 6	Shorshuk ..	Kurla	..	*18½	Leaving Shorshuk, continued along barren waste to 6¾th mile by Ak Tagh langar, near the banks of the Kurla river, which has a thin belt of grass within its banks. At the 10½th mile the road runs through centre of old fort (built by the late Amir Yakub Beg), and enters narrow defile cut by the river. At the 12¾th mile pass mazar, with a small patch of cultivation and first garden. At 15½th mile leave mountains and enter on plain; 3 miles farther is the small town of Kurla. At the 17½th mile enter suburbs, with small fort, and a little further on small bazaar. Before entering the walled town cross Kurla river by bridge.

* These distances differ from those on p. 28.

Date.	From	To	Elevation.	Distance.	Remarks.
188..			feet.	miles.	
Jan. 7 & 8	Rested at Kurla, and took up baggage that was left in the Beg's house.				
„ 9	Kurla	Shangkho ..	..	10¾	Left Kurla, escorted outside the town by old Ashir Beg. Crossed bridge and passed through bazaar in a northerly direction to 1¾st mile to the high road, then turned N.W. by W., following the hills to Shangkho, with a fine strip of cultivation.
„ 10	Shangkho ..	Halted to-day.			
„ 11	„	Chachu or Charchi.	..	27	Continued along plain, over patches of barren waste and jungle. Road good, but sandy Charchi is a small village with several serais or rest-houses. Supplies plentiful. The Kurla district ends here.
„ 12	Charchi ..	Ishma	..	19¾	The road, which is fairly good, but soft and dusty, runs along plain, through jungle, and a few patches of barren waste. Ishma is a small village, with several serais and a few cook shops.
„ 13	Ishma	Chadar ..	..	10	Continued along plain through jungle and patches of waste over good road, but soft and dusty. At 8¼th mile crossed small stream and entered cultivation, crossing two other small streams. Chadar has one Government rest-house.
„ 14	Chadar ..	Yenghi Hissar.	..	16½	On leaving Chadar crossed stream and marched along plain through jungle. At the 12¾th mile passed a single house and entered cultivation, crossing a small stream 1½ mile from Yenghi Hissar bazaar. Road good, but dusty, Yenghi Hissar is a large village with a long belt of cultivation.
„ 15	Yenghi Hissar.	Bugar, old stage in plain.	..	21½	On leaving Yenghi Hissar crossed stream and continued along plain with shrub jungle, which gradually disappears, and the plain for many miles N. and S. of road becomes a saline waste and marshy in many places until drawing near to Bugar. Crossed four streams *en route;* the two last are bridged over. Bugar is a large village with bazaar and extensive cultivation, and has a Chinese official. Road fairly good.
„ 16	Bugar	Yenghi abad	..	22	From old rest-house continued along plain through cultivation for 8½ miles. At the 1¼th mile strike road from bazaar, and at 1¾th and 4¼th mile cross small streams. Leaving cultivation entered on a desert waste as far as Yenghi Abad, a very small village with a patch of cultivation. Road good, but soft.
„ 17	Yenghi abad	Yaka arik ..	..	28	A long march over an arid plain. At 13½th mile passed Awat, a half-way stage with two or three Muhammadan houses and a Government rest-house. Yaka is a fair sized village, with good cultivation and a small bazaar. The mountains abreast of Awat take a bend towards the road.

Date.	From	To	Elevation.	Distance.	Remarks.
					1¼th mile strike road from bazaar, and at 1¾th and 4¼th mile cross small streams. Leaving cultivation entered on a desert waste as far as Yenghi Abad, a very small village with a patch of cultivation. Road good, but soft.
„ 17	Yenghi abad	Yaka arik ..	..	28	A long march over an arid plain. At 13¼th mile passed Awat, a half-way stage with two or three Muhammadan houses and a Government rest-house. Yaka is a fair sized village, with good cultivation and a small bazaar. The mountains abreast of Awat take a bend towards the road.

Date.	From	To	Elevation.	Distance.	Remarks.
1887. Jan. 18	Yaka arik ..	Kuchar ..	feet. ..	miles. 18¾	On leaving Yaka Arik crossed stream and continued along plain, now fairly well tilled and dotted over with farm houses chiefly to the S. of the road. At 11¼th mile passed Ush Kara Langar, and reaching E. gate of city crossed large stream. Kuchar city is well situated near the foot of the mountains, and has a population of 15,000 inhabitants, chiefly Muhammadans, with a sprinkling of Chinese. A large stream from the mountains flows past the E. side of the town and runs S. The suburbs of Kuchar are extensive, with large Tungani quarters. Alum, sal ammoniac, pashm, and a little copper are the products. Grain is exceedingly cheap, but the great rice fields are at Shah-yar, 30 miles S. of Kuchar (see p. 25).
„ 19	Kuchar ..	Toghrak-Dhung. ..	..	16	Leaving N. gate of city marched along a wide level road for nearly 4 miles, when the road becomes a little soft and stony, with steady ascent to rest-house in ravine. At 11th mile passed Karaul, where passports are checked and examined. From the 2nd mile the country becomes an arid waste. A number of sick people came to be cured—Mr. Dalgleish's fame having spread through this country owing to a cure he had effected in passing through Kurla in January, 1886.
„ 20	Toghrag-Dhung.	Kizil	..	21	Leaving Toghrak Dhung, reached top of Shilder Dawan Pass at the 4¼th mile over a good road with steady ascent of 1200 feet. At top of pass there is a langar or rest-house. Hence there is a gentle descent into valley, and along this by a good road to Kizil, a small scattered village with fair cultivation. Coal is used here as fuel.
„ 21	Kizil	Sairam ..	..	10¾	A short march along valley partly under cultivation, with good road. Shortly after leaving Kizil crossed a large stream which passes through a ravine in the mountains towards Shahyar. Sairam is a large straggling village with extensive cultivation. The bazaar is small, and in bad repair. There is also a small fort close to bazaar.
„ 22	Sairam ..	Bai	..	20¾	Continued along valley with cultivation on both sides of road right up to Bai. At the 2¼th mile crossed a stream, and on reaching west end of town crossed a large stream. Bai is a small town with extensive cultivation, and has a large bazaar. Bai is five marches E.N.E. of Aksu.
				1145¼	

DISTANCE TRAVELLED.

	Geogr. miles.	Eng. miles.
Section 1	508¼ ..	586
„ 2	564¾ ..	651
„ 3	310¼ ..	358
„ 4 .. .. .. about	1170 ..	1349
„ 5	1145¼ ..	1320
Total	3699	4264

THE OROGRAPHY OF NORTHERN TIBET.

Described by General PREJEVALSKY in Chapter VII. of his last work, entitled 'A Winter's Excursion from Gass.' *

THE famous Kuen Luen, that "backbone of Asia" as Baron Richthofen calls it, before our last journey, was entirely unknown through 12° of longitude, from the meridian of the Naijin-gol in Tsaidam to that of Keria in Eastern Turkistan. We have now passed along this unknown belt of the most ancient ranges of Asia, and have in some measure elucidated its topography. We find the principal chain forms an arc, the eastern and western extremities of which lie in the same parallel of 36°, whilst the northern periphery touches 38° N. lat. A line drawn to the westward of this in about the 87th meridian of east longitude (from Greenwich) at the point where the still more northerly Altyn-tagh chain separates from the main range would serve to define approximately the centre of the Kuen Luen, its eastern limit being, according to the eminent authority just quoted, the 104th degree of east longitude, where the system is characterised by a ramification into parallel chains. The chief of these, the Kuen Luen proper, serves as a gigantic buttress to the highlands of Northern Tibet, facing on the north the desert and saline plains of Tsaidam; while on the east it cuts off the upper basin of the Hwang-ho and continues far into China.

That this is the principal and no subsidiary chain is proved by its continuity, and the connection between its eastern and western parts through no less than 40° of longitude. Other ramifications of this system fall away about the meridian of Lang-chau-fu. Even that huge snowy range, which, according to the reports collected by us on our last expedition, starts from the Western Kuen Luen, near the gorge of the river of Keria, and is prolonged in a south-easterly direction for a whole month's journey, uniting, perhaps, with the Tang-la or with the mountains rising to the north of Tengri-nor—even that range, I say, should not be considered as the principal one of the system—because in any case its continuity is less, and, deflecting in a meridional direction, it merges in the ranges dividing the head-waters of the rivers of Indo-China and the Upper Yang-tsze-Kiang.

It should also be borne in mind that the central Kuen Luen is always composed of double, and sometimes triple, parallel chains, while throughout its entire extent it borders the plateau of Tibet, and in common with

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* Translated by E. Delmar Morgan.

other marginal ranges of Central Asia is only fully developed with wild mountainous scenery on one side, viz. towards the plain at its northern foot, while the reverse southern slopes are incomparably shorter and less rugged.

The eastern part of the Central Kuen Luen as far west as the Naijin-gol,* or even a little farther—to the Utu Murren†—was described in the narrative of my third journey.‡ I will only add that the outermost chains in this part of the system towards Tsaidam are the Burkhan-Buddha, Ho-shili, Tolai, Torai, Tsosoneh, and Dzukha, the two last, as it would appear, taking the place of the Yusun-obo and Tsagan-nir chains of my former map. More recent information, though somewhat obscure, locates Yusun-obo between the head-waters of the Utu-murren and Batygantu, while the name Tsagan-nir (i. e. white face) has been associated with three snowy groups: Shara-gui, Umykeh, and Karzà in Marco Polo range. This last mentioned range, starting from the confluence of the rivers Shuga and Ugan-Karzà, was followed by us as far west as the snowy Kharzà group. From this point the North Tibetan range part turns to the west-north-west, continuing, however, its twofold and three-fold character. From its outer part, nearest to Tsaidam, the huge snowy crest of Jing-ri towers aloft, probably connected with Garingà range. Between this last mentioned and the western part of Marco Polo range, according to the Mongols, lies a narrow, confined valley; barren in the beginning, but afterwards abundantly watered. This valley is known under the name of Tsagan-tokhoi, and contains the source of the Batygantu,§ a tributary of the Utu-murren, which it joins in Tsaidam.

West-north-west of Jing-ri for 130 miles, as far as the gorge of the Zaisan-saitu, stretches my Columbus range,‖ while to the southward of Jing-ri lies another wide snowy range, perhaps forming the principal chain of this part of the Kuen Luen. In the first instance I named it "Conjectural," ¶ then, at the instance of several members of the Imperial Geographical Society and by the award of the Council, it was re-christened after me.** Its highest point, seen by us only from a distance, I named "Shapka," i. e. Cap "of Monomakh." ††

* The Naichi-gol of Mr. Dalgleish; cf. Itinerary, p. 42.

† The Otto-mairin-gol of Mr. Dalgleish; cf. Itinerary, p. 47.

‡ See his 'Third Journey into Central Asia,' chaps. vi. and vii.; cf. also 'Proc. R.G.S.,' N.S., vol. iv. p. 218.

§ The Patagonto of Mr. Dalgleish; cf. Itinerary, pp. 44-45.

‖ I have given new names to those ranges which, as far as we could learn, had no native names—not an unusual occurrence in Central Asia, where the natives as a rule distinguish by name only separate peaks or passes, perhaps two different portions of one and the same range.

¶ 'Izvestija of Russ. Geogr. Soc.,' vol. xxi. p. 240.

** 'Izvestija,' vol. xxii. pp. 200 and 480.

†† Vladimir Monomachus, Grand Prince of Russia, 1113–1125. A drawing of his crown, the so-called "Cap of Monomachus," may be seen in 'Rambaud's History of Russia,' translated by Mrs. Lang, vol. i. p. 105.

North of Columbus and Garingà ranges and parallel with these runs Tsaidam range, described in a previous chapter of this work,* terminating on the east in a thin wedge on the Tsaidam desert, while on the west it runs up to the gorge of the Zaisan-saitu. A narrow valley, watered by the Khatyn-zang, separates Tsaidam from the two last mentioned chains of mountains; and here let it be observed such funnel-shaped valleys are very characteristic of the Kuen Luen.

The continuation of "Columbus" range beyond the gorge of the Zaisan-saitu is formed by another snowy range, named by me "Mosco," and its highest peak "Kremlin." Mosco range extends to the west for 70 miles, or thereabouts, to the Tokus-dawan, uniting with this latter probably at the point where the more northerly Altyn-tagh separates from it before being joined by the Chamen-tagh. The Tokus-dawan has a south-westerly direction, and near the gorge of the Cherchen river unites with a gigantic mountain mass belonging to the Western Kuen Luen, also bordering the Tarim basin, and named by me as far as the Keria river "Russian" range. This range, or perhaps the Tokus-dawan, is joined by "Prejevalsky" range.

The chief constituent rocks of the west Central Kuen Luen are silicious schists and granite, with occasional quartz reefs. The most striking features of eastern parts of these mountains are their immense height and, therefore, great number of snowy peaks, the comparative absence of cliffs—at all events in the snowy groups, the want of rivers, general sterility of the soil, and lastly the poverty of their flora and fauna. On the other hand gold is everywhere abundant, and will be the first bait to tempt hither the avaricious European.

Upon returning from a reconnaissance, undertaken with the object of discovering the road to Lob-nor, our two Ulan-gadjir † guides were dismissed to their homes, handsomely rewarded for their services. We now remained alone in the midst of the wilderness, having to discover the road for ourselves in the winter expedition we were about to commence. But this was nothing new for us, and in winter when ice can always be transported, there is no insuperable difficulty to be overcome. We formed our depôt at Chong-yar, ‡ leaving under the charge of Sergeant Irinchinoff, six Cossacks, the interpreter Abdul Yusupof, besides camels, horses, sheep for food, and a quantity of baggage. The Cossacks were to take turn and turn about in pasturing the animals and night-watching; their leisure hours they were at liberty to employ in literary diversion and the chase. Yet, notwithstanding the comparative rest they were now to enjoy, the men left behind envied their companions who were about to march, for these would experience novelty and variety incidental

* For the chief rocks of the Eastern Kuen Luen, see the narrative of my third journey.

† The Ulan-Gazar of Dalgleish's Itinerary, cf. p. 47.

‡ Corresponding with Bagh Takai of Dalgleish's Itinerary, cf. p. 31.

to active life, while those at the depôt would suffer from the tedium and monotony of daily routine, irksome at all times, but especially so in winter. Our marching caravan was not large. It consisted only of 25 camels,* 4 riding horses, and 15 sheep—the last mentioned being intended for food. The baggage was reduced to the smallest possible limits, and supplies taken only to last two months.

On the 19th November (1st December) we started in a westerly direction, travelling along a wide valley extending as far as we could see, and named by me, in consequence of the continual winds and tempests which visit it, the "Valley of the Winds."

The first march from Chong-yar is 23 miles long, over an absolutely barren plain covered with sand, loess, and small pebbles, with a gradual rise amounting to 1300 feet in the aggregate. We left in the afternoon, camped half-way, and, having replenished our supply of water and fuel, reached the Zaisan-saitu the following day at the point where this river, owing to the steeper incline, hides itself below ground, reappearing again in the form of springs at Chong-yar and other salt marshes round Gass. These springs give rise to a number of brooks, which collect in one rivulet and fall into the south-western corner of the lake.

The Zaisan-saitu has its sources in the glaciers on the southern slope of Mount Kremlin. It divides Mosco from Columbus and Tsaidam ranges, afterwards turning eastward along the Valley of the Winds, where it soon disappears from the surface; after an underground course of 13 miles it again shows itself a good-sized river, then for the second time it disappears as above stated. Not far from this spot the Zaisan-saitu is joined from the south-east by the Khatyn-sang, a river which rises in Mount Jing-ri, and receives the drainage of the glaciers on the southern slope of Columbus range. This river, however, does not approach within seven miles of the Zaisan-saitu in winter, though in summer the two probably unite.

At the place where we now struck the Zaisan-saitu, i. e. in its lower course, this river, measured over the ice, had a breadth of 140 to 175 feet;† the thickness of the ice was 2½ feet, and the depth of water under it did not exceed 1½ foot. The width of the valley on either side averaged about a mile, and the soil is loess and sand lying in wind-drifts. Vegetation consists of a dirisun-like grass, reeds, and a few species of the order *Compositæ*. The bushes are *Myricaria* and *Oxytropis*. The pasturage is generally good, especially in summer, when there are neither mosquitoes nor flies here, said to be prevalent at Gass. To the right and left of the valley sterile plains extend up to the steep slopes of the margining mountains, with an occasional group of hills as barren as the

* Twelve for baggage, nine for riding, and four in reserve.

† At the point of its disappearance the Khatyn-sang, tributary of the Zaisan-saitu, is twice and even four times this width.

plain they rise from. The valley we are describing is the haunt of the Tibetan antelope; it is visited by the wild ass, and the yak may as an exception be seen here.

Ascending the Zaisan-saitu, we at first made good progress, there being plenty of forage, water, and fuel. All this, however, came to an end as soon as we had passed the springs which supply the river. A bare wilderness then stretched out before us, of what extent none could say. We were therefore obliged to return to the springs and reconnoitre the country. Starting myself with two Cossacks, I was rejoiced to alight upon the river the same day. Emboldened by this discovery and the fineness of the weather, we extended our survey in a westerly direction up the Valley of the Winds and along the snowy ranges bordering it, our whole caravan advancing to the newly-discovered water-supply. From our barometrical observations it appears there is a rise of 800 feet in 15 miles, and owing to this the stream, not strong enough to keep above ground, hides itself below the surface.

When we had risen to an altitude of 11,500 feet above the sea, we found no vegetation even on the banks of the river, and could foretell a bad time for our unfortunate animals. To make matters worse, the night frosts continued and the wind-storms increased in vehemence and frequency, their direction being mostly from the west, i. e. right in our faces. In such weather surveying was most difficult, and at the end of a day's march eyes and head ached from constant exposure to the icy blast.

We continued the ascent of the rediscovered Zaisan-saitu over a pebbly plain, where only occasional tufts of stunted camel-thorn (*Alhagi camelorum*) and *Reaumuria* appeared above ground. A dead quail and thrush were picked up in an arid tract, these birds having probably dropped from exhaustion during flight, and fallen victims to their inexperience in attempting a direct passage southward across so desolate a region.

We now turned to the south-west instead of continuing in the same westerly direction as hitherto, and then to the south, where the Zaisan-saitu bursts through the neighbouring mountains of Tibet. We went in this direction because we intended first visiting the plateau and then resuming our journey along the Valley of the Winds, which now remained on our right and vanished away to the westward. From the higher ground we could see accumulations of ice along it in places, and therefore felt certain that our caravan could pass that way.

The defile of the Zaisan-saitu, which we soon entered, proved excellent marching ground even for camels, the main chain of the Kuen Luen at this point only being lower, and much less rugged and precipitous. The defile is 11 miles long, and divides the two ranges I have named Tsaidam and Mosco. The mountains here are almost barren, and mostly covered with deposits of loess. Along the banks of the river

only are there a few patches of sedge, and even these had been eaten off by wild animals. Towards the southern end of this defile the Zaisan-saitu again disappears, at all events in winter, for a distance of 11 miles. To the west stretches Mosco range, while to the south and east, beyond some low hills steeply scarped in places, lies the great plateau of Tibet, with the western angle of Columbus range visible in the distance.

Weather in November.*

Meanwhile November had passed, two-thirds of which we had spent at Gass, at an elevation of 9000 feet above the ocean; the last part of this month in the Valley of the Winds, at altitudes of 10,500 to 12,000 feet.

Like October, November was remarkably clear; during this month we counted twenty-four clear days, and only six cloudy. The frequent recurrence of bad weather experienced by us in Tibet was now at an end, though in the mountains bordering that country it was certainly more cloudy than at Gass and in the Valley of the Winds. There was no snowfall in November—indeed, throughout the winter, it rarely snowed in this region, and then only very little, while the atmosphere remained continuously extremely dry.

In clear calm weather the warmth of the sun could be felt though the thermometer stood as low as 20° Fahr. in the shade at one o'clock in the afternoon. With a moderate wind in the daytime, after the sun had warmed the surface of the ground a little, the temperature would rise occasionally to 39° Fahr. The dominant winds came from the west, though calms were not unfrequent; at night there was always a light or moderate wind from the west or south-west. We counted seven gales blowing from the same quarters, therefore many more than in October. But these gales, as a rule, followed one after the other, as we had noticed in Tibet and Tsaidam, with alternations of fine and bad weather. During a gale the atmosphere would be always filled with dust. The frequency of these storms and winds, however, increased towards the end of November when we had entered the Valley of the Winds, where the configuration of the country causes a nearly constant west wind. The night frosts at Gass were as much as −20° Fahr.; in the Valley of the Winds, if there were no calm, the temperature at the end of November never fell below −15° Fahr.

Let us now speak of the mountains in whose vicinity we found ourselves.

* The old style dates have been converted into new throughout this translation, but when only a month is given the reader must calculate the difference for himself, e.g. November must be understood to mean from the 13th of this month to the 12th of December, and so on.

Mountain Ranges.

*Chamen-tagh.**—The northern border of the eastern half of the Valley of the Winds is formed by the Chamen-tagh, of which I had heard on my Lob-nor journey.† It stretches from east to west for upwards of 70 miles, uniting on one side with Altyn-tagh, and on the other with the arid, waterless range rising to the north of Gass. In breadth the Chamen-tagh does not exceed seven, at most, ten miles, while, throughout, its elevation is enormous, and at three groups—at both extremities and in the centre—it rises above the snow-line. Judging from the position of the glaciers, the westernmost of these three groups of peaks is the highest. From its northern slope, as we heard, starts a river which breaks through the Altyn-tagh and discharges into Lob-nor. This is probably the Chargalyk-daria. From the same slope of the easternmost group, underground drainage forms the lakelet and swamps of Gashun-nor. Lastly, the glaciers of the southern slope of this eastern knot of mountains contribute to feed the Zaisan-saitu also with subterranean water.

The Chamen-tagh, as we have said, rises as a narrow precipitous rampart, but the slopes of its valleys, north and south, form a steep glacis from one to two thousand feet in vertical elevation. These slopes are absolutely barren, aridity being a marked feature of the Chamen-tagh, at all events on the south side where there are neither brooks nor springs. The gradients are exceedingly steep, and, in the upper belts, covered with detritus, while the ravines are narrow, also precipitous and nearly devoid of vegetation. In these and at the foot of some of the lower slopes, occasional clumps of fruit-bearing *Ephedra*, wormwood, mugwort, and other plants allied to *Artemisia*. Tamarisk and camel-thorn occur, while here and there are scattered an occasional clematis, statice, small grasses, and *Compositæ*.

The *mammalia* of the Chamen-tagh comprise the wild donkey, the argali or mountain sheep (*Ovis Dalai-Lamæ* n. sp.), and probably wild goat, wolves, foxes, hares, and Alpine hares; a few wild yak are also occasionally seen.

Among birds we observed the brown vulture (*V. monachus*), lammergeier (*Gypaëtos*), choughs (*Fregilus graculus*), horned and black-crested larks (*Otocoris albigula*, *O. Teleschowi* n. sp.), the allar or great mountain partridge (*Megaloperdix thibetanus*, *M. himalayensis*), and thrushes (*Carpodacus rubicilla*). The fauna and flora of these mountains are so scanty that the Turkish name *Chamen-tagh*, i. e. flowery range, is undeserved.

Tsaidam.—From the southern side of the same eastern half of the Valley of the Winds rises another great range named by me as already stated—Tsaidam. It stretches from east to west for upwards of 200

* The Chimen-tagh of Dalgleish's Itinerary, cf. p. 34. See Supplementary Note.
† See 'Proc. R.G.S.,' 1889, p. 375.

miles in a direction parallel with Columbus and Garinga ranges, from which it is separated by a narrow valley. On the east it terminates in a narrow arm in the Tsaidam plain, not far from Ulan-gadjir; on the west it unites with Mosco range, from which it is separated by the defile of the Zaisan-saitu, or to define its limits more accurately, by a transverse chasm three miles farther east.

The Tsaidam range is for the most part narrow, particularly in its western half; to the east of the Khatyn-zang it widens and is higher. Here are situated two snowy peaks: Ikhyn-Gansyn-Khorgu and Ikhyn-Gasyn-Khorgu. Between them the range is somewhat lower, and from the north, on the Tsaidam side appears as a bulging wall, while the southern slope inclines towards the Khatyn-zang valley. Not far from its eastern snowy summit the Shara-gol Pass leads into the last-mentioned valley from Gansa. There is one other transverse defile, 17 miles to the west of the Khatyn-zang Gorge, in the narrowest part of this barren, waterless range. The rocks composing it are granite and schists, much weathered by atmospheric influence, particularly by winds, and for the most part covered with loess.

Columbus.—Parallel with Tsaidam there is yet another great range, nearer the Tibetan plateau named by me in honour of the discoverer of the New World. Columbus range starts from snow-capped Jing-ri, trends north-west, then due west, terminating in a thin wedge, 17 miles short of the Zaisan-saitu defile. With a total length of 130 miles it is steeply scarped on the north towards the valley of the Khatyn-zang, while its southern shorter slope overhangs the tableland of Tibet.

This range is narrow throughout, not exceeding even in its widest part 13 miles. Its western half is lower than its eastern, where snow lies all the year round, and where the ice-clad peaks are as white as Jing-ri itself. The western half only rises once above the snow-line at a small group on the northern side. The prevailing feature of Columbus range, in common with other chains of the West Central Kuen Luen, are an identity of rock formations, comparative absence of crags, aridity, and probably an equal profusion of gold.

Mosco.—The third range, forming a continuation of the two last mentioned, and sheltering the valley of the winds on the south, has been named Mosco. It runs, as we have said, for 70 miles or thereabouts to its junction with the Tokus-dawan. With the exception of a small section on the east, this new range is covered throughout with glaciers, most extensive in the centre where Mount Kremlin rises. When viewed from the plateau, this peak has the appearance of an obtuse cone, perhaps not lower than Jing-ri. Enormous glaciers cover its northern and southern slopes, and on its eastern side lies a wide *mer de glace.*

Near its junction with Tokus-dawan, Mosco range seems to widen, and its southern slope is steep and precipitous—at all events, in its

eastern parts; the northern, though also steep, is comparatively smooth, especially in central parts of these mountains, for here the frequent gales of wind sweep the valley and choke the defiles with their deposits, disintegrating the rocks and rounding the contour of the hills. Even on the southern slopes of Mosco range, however, there are but few cliffs and this is a feature characteristic of Tsaidam, Columbus, and other ranges on the tablelands of Tibet. The rocks throughout are siliceous slates.

From the glaciers of the southern watershed of Mount Kremlin, the Zaisan-saitu takes its rise. What rivers drain the more westerly parts of Mosco range, and in what direction they flow, I am unable to say. Not a single rivulet descends from the numerous glaciers on the northern face, though dry channels here and there show where the rainfall and melting glaciers drain away in summer. Mosco range is, in general, exceedingly barren, especially on the south side. On the reverse northern slope are found a few grasses, such as *Carex*, *Avena*, *Ptilagrostis*, and diminutive specimens of *Oxytropis*, *Tanacetum*, *Androsace*, *Saussurea*, and *Saxifraga*, the two last-mentioned at an elevation of 14,000 feet above the sea. Among bushes we came across a kind of bean, barely showing its head above ground, and an *Eurotia*, six inches high. The Tibetan sedge (*Kobresia*), plentiful in the swamps of north-eastern Tibet, is conspicuous by its absence here, another indication of the absence of periodical rains in summer.

The fauna of Mosco range, as well as of all adjacent parts of the Kuen Luen, is poor, and offers but little variety to that of north-eastern Tibet. Among larger quadrupeds there are wild donkeys, argali, wild goat, and a few yak, together with wolves, hares, alpine hares, and small rodents, Birds are also scarce, both in variety and number, owing to the barrenness of the soil and the horrible climate. In the mountains we saw vultures, lammergeiers, choughs, great partridge, mountain finch (*Montifringilla Adamsi*) horned larks, and by way of exception, Tibetan grouse. No human beings inhabit these regions. But we came upon traces of bivouacs of Turkistanis, who come hither in summer, unbeknown to the Chinese, from the nearest oases of the Tarim basin to seek for gold.

The Plateau of Tibet.

In two short marches to the south of the Zaizan-saitu defile we entered the plateau of Tibet. Our highest point was 13,800 feet, the hills on either side being low. Another ascent farther north, by which we returned, is 700 feet lower. We now saw a wide plain opening out eastwards as far as the eye could see, bounded on the north by Columbus range, rising steeply, though not much above it. To the south-east and south lay a confused medley of hills and low ridges, beyond which glistened the hoary heads of Prejevalsky range. Finally, in the midst

of the plain, we beheld, to our astonishment, a large lake of unfrozen water, which I there and then christened Unfreezing Lake. We moved towards it over a slightly inclined plain, almost barren but for the few clumps of reeds the wild animals had not yet devoured. Beyond this again, we marched over pebbles. As we went towards the lake it appeared to be close to us, yet at nightfall, when we pitched our camp in some scrub *Artemisia*, we were still 12 miles off. This brushwood was an unexpected godsend, supplying us with fuel and our ravenous animals with forage; as for water, we melted some of our supply of ice, and on the morrow continued our journey towards the lake, feeling uncertain if we should find drinkable water there, our stock of ice being nearly exhausted. Fortunately, near the west shore of the newly-discovered lake, which proved to be excessively salt, we came upon several frozen springs in the midst of salt marshes, and, melting the ice, we gave our horses a bucketful apiece. The condition of these animals had become very poor, owing to the insufficiency of forage and the cold, but the camels held out well.

Having passed the night near Unfreezing Lake, concerning which more by-and-by, we advanced towards the south-east, in the direction of a rivulet we had seen from the pass. It proved, however, to be nothing but a dry watercourse, here and there encrusted with salt, which, from a distance, looked like ice, and we found ourselves obliged to halt for the night at some bare loess hillocks, where our poor animals again had nothing to eat, and the few remaining sheep eagerly tore tufts of hair off the camels' backs as these beasts were lying down at night, and devoured them ravenously.

On arriving at the camping ground, Robarofsky and I rode forward to reconnoitre. Two miles from our halting-place we ascended one of the clay hills of which I have spoken, and had an extensive view on all sides but could see nothing of a satisfactory nature. To the south and south-east was an unvarying expanse of the same loess hills. These were entirely barren and took all kinds of curious shapes. Here might be seen towers, forts, cones of every size, bridges, arched galleries, vertical walls, &c., &c. Their average height did not exceed 300 to 500 feet, while a few rose to 800 and even 1000 feet. In the direction of our lake they broke off suddenly with a steep fall. Here and there the porous loess had been cemented into a hard mass, in which layers of gypsum occurred. On the summits of these hills and in their fissures there lay coarse pebbles.

Having carefully examined with a telescope the whole neighbourhood, we decided to proceed no farther. The barren loess hillocks lay a great distance to the south, beyond were the snowy mountains; in fact, the difficulties were, as far as we could judge, insuperable for a caravan like ours of partly exhausted animals. In another direction towards the east, along the southern shore of Unfreezing Lake, though a few patches of

grass and ice-covered brooks might be seen, affording facilities for the march of a caravan, we had no object in going farther, for the margining Columbus range could be seen even without this, extending for 70 miles, and beyond it we could not in any case have gone. Lastly, we had to make the most of our time and survey the western half of the Valley of the Winds and its margining mountains while our camels were as yet fit for work. Upon the whole, therefore, we decided to turn our backs on the Tibetan plateau and continue our journey to the westward of the Zaisan-saitu river.

Unfreezing Lake.

This lake lies at an elevation of 11,700 feet above the ocean on a wide lofty plain stretching at the southern foot of Columbus range. In form it resembles, as far as we could see in the distance, a long arm stretching from east to west for over 30 miles, while in width, at all events in its western half, it was only six or seven.* The water was excessively salt† and of a deep blue colour, its extreme salinity being probably the cause of it never freezing. At all events, when we were there in December, in spite of frost of −30° Fahr., there was only a narrow belt of rotten ice along the margin for a width of 300 yards from the shore and about 12 inches thick. The temperature of the water below the ice on the 8th (20th) December was 12° Fahr. at 2 p.m. On calm frosty nights a thick mist covers the lake, having the appearance at daybreak, when the sun's rays first illumine it, of a dazzling white shroud. Near its south-western shore Unfreezing Lake is very shallow, and probably of no great depth anywhere, being even shallower along the southern shore, where we examined for some distance the belt of salt marshes and lagoons that fringe it in this direction as far as the ridges of barren loess hillocks of which mention has been made. The western half of the lake has no tributaries, but its eastern part is probably fed by several streams,‡ which take their rise in the snows of Columbus and Prejevalsky ranges, while subterranean water forces its way to the surface in the form of springs.

The shores of the lake, as well as the plain bordering it, are a wilderness of the type of the western Nan-shan, near Sha-chau, rather than of Tibetan character. Besides the ill-favoured saline plants and an occasional *Polygonum*, patches of reeds are occasionally met with, taking the place of the Tibetan sedge, while along the pebbly ground a few dwarf bushes of *Artemisia*, *Eurotia*, *Reaumuria*, and *Oxytropis* trail their stunted

* The Chong-kum-kul of Dalgleish's Itinerary, cf. p. 34. Carey estimates the width of the eastern end of the lake at 18 English miles.

† The sample of water we brought back has been subjected to chemical analysis by Professor K. G. Schmidt, of the University of Dorpat, and the result published in the Bulletins of the Imperial Academy of Sciences (May or June 1886).

‡ Carey mentions having come across a large river (Kum-kul-daria) flowing, as I suppose, from Jing-ri. Cf. Itinerary, p. 35.

growth. Such animals as the wild donkey visit its shores in passing, while among birds the few we saw were the sand-grouse (*Syrrhaptes paradoxus*) and horned larks (*Otocoris albigula*). Indeed, nothing can exceed the poverty of the flora and fauna right up to the snowy mountains on the south of the new Prejevalsky range.

Prejevalsky Range.

This range, as already stated, was named by me Conjectural, because we only saw it from a distance, and plotted it on our map approximately. We succeeded, however, in fixing, though only by one intersection, its highest apparent peak, reminding us in shape of Monomakh's Cap (*ante*, p. 61). Farther east again, we saw more snowy peaks, the farthest in this direction being apparently only 27 miles from Jing-ri, leading us to suppose that there was a connection between the two, though in reality this does not exist.* About 50 miles to the south of Unfreezing Lake we plainly saw a row of snow-capped summits, in all probability forming part of the same range, its intermediate part towards Monomakh's Cap being hidden from sight by comparatively low intervening outliers. To the west, again, nothing positive is known of this range except that from the Zaisan-saitu, and from the pass leading into Tibet, we saw, a great distance in a south-westerly direction, a lofty, sharply defined peak, which perhaps belongs to it. If this should prove to be the case, judging from the analogy of other ramifications of the central Kuen Luen, it may be inferred that Prejevalsky range stretches a long way to the westward, and is connected with Russian range or the Tokusdawan.

Thus, the range we are describing forms a southern branch of the west-central Kuen Luen, and perhaps its principal chain, the last hypothesis deriving support from the circumstance of the non-Tibetan character of the region bordering on Unfreezing Lake, and from the fact that this lake occupies a hollow or depression between two ranges, the southernmost, Prejevalsky range, probably the loftier of the two, forming the verge or margin of the Tibetan plateau.

Route along the Valley of the Winds.

On our return from Unfreezing Lake we shortened our journey a little by taking a direct line to the Zaisan-saitu; then, having descended the defile of this river, we turned to the west into the Valley of the Winds For two or three marches we passed through localities which we had already surveyed from a distance, and here reconnaissance was unnecessary, more especially as forage was obtainable in sufficient quantities, and there were frequent springs covered with ice; for fuel we grubbed up the scrub bushes and creeping myricaria.

* According to Mr. Carey's observations.

And so we advanced, without making any prolonged halt, by daily short marches, carrying a felt tent, while the Cossacks, except those who slept with us, passed the night under canvas. Nothing could have been better than their conduct throughout; the daily routine, the night and day watching were never relaxed, no matter what the difficulties and privations encountered, and in spite of a diminishing allowance of rations; for we were now obliged to economise even such necessaries as brick tea and barley meal, though frosts and tempests hardly ever ceased.

In the latter part of November the thermometer four times stood as low as −22° Fahr., and shortly afterwards the mercury froze, while an icy wind blew constantly in our faces from the west, sometimes accompanied by a light snowfall, which intensified the cold. How well I remember the violent gale that occurred on the 27th December, soon after leaving the Valley of the Winds. It began in the morning and continued till evening, reaching its greatest force between 11 and 3 in the day. The violent gusts raised clouds of sand, which turned daylight into a kind of yellowish-grey obscurity. Objects thirty and forty paces off were invisible; the wind took away our breath if we tried to meet it, and filled our eyes with sand, while the thermometer, even at 1 p.m., stood at 12° Fahr. During all this time the sky continued cloudy, and at 3 p.m. snow began to fall. Then the storm suddenly ceased, and the atmosphere at once became clear. In about two hours, however, there was another burst, less violent, however, than the first, and gradually becoming weaker, till about midnight the wind dropped, and it was calm. In the morning we had to take spades and clear the drift sand from our camp.

As we advanced westward the elevation gradually increased and the valley grew more barren. But in the lower belt of the northern slope of Mosco range, along which we were marching, patches of grass were here and there to be seen in the ravines. The huge glaciers of the central parts of these mountains glittered brilliantly in the midday sun, yet so smooth was the glacis at their foot that, if our horses had not been tired there would not have been the slightest difficulty in riding up to them. But we hardly thought of attempting such an excursion for the present, our chief aim being to reach the pass leading over the marginal mountains to the Tarim basin. To our great joy, and sooner than we expected, we gained this pass on the 31st December, the ascent from the valley being imperceptible, though the elevation was 12,900 feet above the sea. The descent on the other side in a continuous westerly direction is also quite gradual for about 12 miles to where the Altyn-tagh meets the Tokus-dawan range. Here the defile of the Cherchen-daria begins, and the Altyn-tagh, causing this river to describe a wide bend, rises in an extensive snow-capped group of peaks, the only one in the range. According to hearsay information, these mountains

have no specific name, and may therefore bear that of Cherchen, for the river and oasis of Cherchen * derive their waters from their snows. From the northern side of this snowy group another rivulet flows, probably to Vash-shari.† The road from the pass to Cherchen is suitable for pack asses and horses, but camels cannot pass it without difficulty. We saw well-beaten tracks leading from the Valley of the Winds to Cherchen, and it is by this route that gold miners cross the mountains with their laden asses.

However attractive the idea of at once proceeding to Cherchen might now be, with its warmer climate and abundant supplies, and much as we wished to survey the road thither, we nevertheless were obliged to renounce all idea of doing this for the present, for we were a long way from our depôt, our horses and some of our camels were exhausted, and we had to reach Lob-nor in due season. These considerations prevailing, we only looked with longing eyes at the descent, and the following day turned our backs upon it, retracing our steps to the Valley of the Winds.

Description of the Valley of the Winds.

This newly-discovered valley, already repeatedly mentioned in my narrative, stretches for 130 miles from east to west, with a slight inclination to the southward in its western half. It is bordered by the ranges—Chamen-tagh and Altyn-tagh—on the north, Mosco and Western Tsaidam, on the south, while on the east it opens on the lake of Gass. Its average width, if we include the skirts of the mountains bordering it, is about 14 miles in the west, and 27 miles in the east. The elevation gradually increases from east to west; near Chong-yar reaching 9500 feet, while at the descent to the Cherchen defile it rises to nearly 13,000 feet above sea level.

Throughout the whole extent of the eastern half of this valley, along a trough-like depression in its centre, flows the Zaisan-saitu, except where this river hides its stream underground. In the western half the channel is marked only by a broad pebbly bed, in which frozen springs occur. In summer, when the snow melts on Mosco range, there is water in this channel as well as in the lateral glens descending from the same snowy mountains.

The climate of this valley is, as I have already stated, characterised by a prevalence of westerly gales. Calms, lasting only an hour or two, are exceptional; and the wind occasionally attains the violence of a hurricane, blowing continually from the west, a fact attributable in

* The Charchand of Carey and Dalgleish.

† Vash-shari is, according to the map, 107 miles north-east of Cherchen (Charchand), at the foot of the Altyn-tagh. Here Prejevalsky, when he afterwards visited it, found the remains of an ancient city, with a river, probably the one mentioned above. There are different versions of the name—Gass-shari, Vass-shari, or Vash-shari.—M.

some measure to the lie of the land, which is that of the westerly winds prevailing over Tibet, and also by the proximity of huge snowy ranges from which cold currents of air descend into the valley. This latter circumstance, as well as the great absolute elevation of the land, fully account for the severity of the climate. Certainly the eastern lower part of this valley, including Gass, is warmer, while in the western the cold is severe enough to freeze mercury, a fact never before observed on any of our previous journeys into Tibet, not even when we were on the Tang-la. Even in summer the cold is probably great, and there are sharp night frosts. Rain, judging from the arid appearance of the country, must, I should think, be rare.

The soil is sand, loess, and pebbles. Where there is no water there is next to no vegetation, except where *Artemisia*, camel-thorn, and tamarisk (*Reaumuria*) occur. The last-mentioned plant at elevations over 12,000 feet, is replaced by a creeping Tibetan *Myricaria*, but no bush in this region raises its head high above the ground. Along the lower course of the Zaisan-saitu we met with a somewhat richer vegetation and tolerable pasturage. Farther west, we only found a small sedge near the springs, and higher still, a species of small primrose (*Androsace*) upon which the numerous alpine hares eke out their subsistence. The flora of the eastern half of the valley, as far as the defile of the Zaisan-saitu generally, assimilates with that of Tsaidam; that of the western half, with northern Tibet.

The fauna of this valley and adjacent tracts is poor. The orongo-antelope, however, is plentiful in most parts, though we saw none of these animals at Unfreezing Lake. Neither are there any at Gass or in Tsaidam. The wild ass, wolves, and hares, are also not uncommon, but the wild yak only passes through this valley on his migrations from one range to another. Near the pass leading to the Cherchen defile, we came across marmot burrows, and large numbers of a new species of alpine hare. Birds are also scarce throughout the valley. We only found the mountain finch (*Pyrgilauda ruficollis*, *P. barbata*, *Onychospiza Taczanowskii*), horned larks (*Otocoris albigula?*) and Tibetan sandgrouse (*Syrrhaptes thibetanus*); even vultures and crows are scarce.

The only attraction so desolate a region could possess for man is the gold, which, as we heard, is very plentiful, particularly about Buguluk. In fact, we saw diggings, generally not over two feet below the surface. The style of working them is, of course very primitive, the miners being, evidently, used to carry the alluvial soil in sacks slung over their shoulders to the running water, a mile off.

The Valley of the Winds might serve as a most convenient approach to China from the southern oases of Eastern Turkistan, by way of Tsaidam and the defile of the Cherchen, for along this latter, as we heard, caravans may pass without difficulty. For a considerable distance this newly suggested route would pass along the salt swamps of Southern Tsaidam and

for two long, waterless marches through the north-western part of that plain. On the other hand, it should be borne in mind that the deserts of Central Asia nowhere afford a completely satisfactory route for great distances. Deserts they are and deserts they will remain. The obstacles here, however, are insignificant compared with those presented by the arid Kum-tagh sands or the difficult mountain track along the Altyn-tagh, following a more northerly route to China by way of Lob-nor. Farther south again, the Tibetan plateau offers even greater difficulties for the march of a caravan, owing to the rarefaction of the air at those enormous heights, the want of firewood, and the scarcity of pasturage. But in summer all these routes would be impracticable for caravans: that by Northern Tibet, owing to the rains which flood the rivers and moisten the argols, indispensable for fuel; the Tsaidam route, in consequence of the inundated state of the salt marshes and the myriads of insects infesting them at that season, while that by way of Lob-nor and the waterless Kum-tagh owing to the heat and want of forage in the Altyn-tagh, where, moreover, the ravines are difficult to cross. In summer, however, all Central Asian deserts are impassable for caravans, and the natives never venture to set out on long journeys at such times.

The following is a brief summary of some particulars of the route. Starting from the town of Donkyr, in Western China, an easy road leads to the table land about Koko-nor. Here the road bifurcates, one branch leading north and the other south of the lake, the two uniting again at the Buhain (Pouhain-gol), whence by gradual ascents and descents the pass (12,900 feet) over the south Koko-nor chain is crossed and the open valley of Dabasun-gobi reached. Continuing westward along this valley, another chain of the south Koko-nor range is traversed by an equally easy pass. The narrow defile of the Dulan-gol has now to be followed, and for ten miles the road lies over a salt plain, before crossing a small spur of the mountains. Twenty miles farther the traveller finds himself at Irgitsik, where the salt swamps of Tsaidam begin. The road along its south-eastern part for 47 miles, as far as the *Khyrma* (station) of Dzun-zasak, offers no special difficulty when there is a good guide to point out how the swampy places may be avoided. Nor is the ford across the Baian-gol difficult, except during the summer floods. The distance from Donkyr to Dzun-zasak at the foot of the Burkhan-Buddha is 310 miles*; and this is the usual route taken by caravans of pilgrims bound for Lhassa and by Tibetan merchants going to Sining. Along the whole way there is sufficient water, fuel, and forage for man and beast, whether camel, yak, or horse.

From Dzun-zasak our route turns towards the west as far as Ulan-gadjir on the Utu-murren, keeping along the southern border of the bare salt plains of Southern Tsaidam for 250 miles along a belt of bushes

* That is by the southern shore of Koko-nor; following the northern shore the route is 27 miles longer.

where the near proximity of the lofty Tibetan mountains insures a water supply, whether in the form of springs or brooks, at intervals of seven to ten miles, and there is only one waterless march of 23 miles. Here, too, are three fair-sized rivers—the Nomokhun-gol, the Naidjin-gol, and the Utu-murren. On the two last mentioned pasturage is abundant, and there is generally plenty of grass, at all events in autumn, near the springs. Fuel, consisting of bushes, is also plentiful. The track is well beaten by the Mongols, whose unshod horses trample the saline clay till it becomes as hard as stone, and the swampy bits of the road may always be avoided by making circuits.

From Ulan-gadjir, where the salt plains of Tsaidam terminate, the road takes a north-westerly instead of a westerly direction; at the same time the elevation increases, the ground becomes more hillocky, more arid, and pebble strewn. Here two long waterless tracts have to be crossed: one of 45 miles from Ulan-gadjir to Gansa, where forage and water are abundant; the other from Gansa to Gass, 38 miles. At Gass there is an abundance of water, good pasturage and fuel. This is therefore a convenient place for halting the caravan and giving the beasts of burden time to recover their strength. In the course of the summer these animals, if allowed to graze in the neighbouring Zaisan-saitu and Khatyn-sang valleys, will entirely recover. Total distance from the Utu-murren to Chong-yar, our depôt at Gass, 210 miles,* along which, if we except the two above-mentioned waterless marches, there is no want of water, fuel, or grass.

From Chong-yar the road into Eastern Turkistan again divides: one branch leading due north, direct to Lob-nor, the other taking a westerly direction, brings you to the oasis of Cherchen. Both roads are suitable for caravans, even with camels. By the former, the distance to the village of Abdal on Lob-nor is 168 miles, including two waterless marches—one of 48, the other of 35 miles; besides which, the region traversed is generally more arid than that by the westerly route. Following the latter, at the end of the first day's march of 22 miles from Chong-yar, you reach a well-watered and grassy camping ground on the lower Zaisan-saitu. Up this river for forty miles lies the continuation of the road before entering the Valley of the Winds. In the western part of this valley forage and fuel are scarce, but caravans may nevertheless pass along it. Having gone 150 miles, the traveller at length finds himself in the valley of the Cherchen, and here I can only repeat the information I heard, according to which the marginal range may be crossed without difficulty by laden asses and horses, though not so easily by camels. From the summit of the pass it is 133 miles to the oasis. The distance is usually accomplished in eight days, viz. two from the commencement of the descent to the source of the Cherchen, which is

* From Dzun-zasak to the Nomokhun-gol 38 miles, hence to the Naidjin-gol (Naichi) 94 miles, and from the last mentioned river to the Utu-murren 118 miles.

fed by glacier water from the Altyn-tagh and Tokus-dawan ranges; three along the upper course of this river, and three more for the passage over the western angle of the Altyn-tagh * and the descent of the lower Cherchen-daria to the Cherchen oasis. By this route the whole distance from Donkyr to Cherchen is about 1030 miles, while from the same place to Lob-nor viâ Gass may be reckoned at 942 miles.

Such, then, is the route discovered by us from Western China to Eastern Turkistan. It is strange that the Chinese have, so far as we know, not availed themselves of it for their intercourse with the last-mentioned country, an intercourse dating from the second century before Christ, when the dynasty of the elder Hans ruled over China. These relations, at times peaceful, at times warlike, now active and now wholly interrupted, according as they were influenced by political events in Central Asia and China, were always directed in the first centuries of our era by way of Lob-nor. The road ran from the town of Sha-chau to Lob-nor; then through Cherchen, Khotan (Yutien), Yarkand (So-tsiui), Kashgar (Suleh), and so on to the western countries beyond the Pamir.

By this line of communications, continued through Balkh (Bactra) and Merv (Margiana) to the southern shore of the Caspian, the ancient trade of China with the western world was maintained. From the eighth century after Christ the Lob-nor route began to fall into disuse, and the more convenient one at the foot of the Tian Shan came to be preferred. The former was not, however, altogether effaced, for at the end of the thirteenth century we read that Marco Polo travelled that way, and in the first quarter of the fifteenth century the embassy of Shah Rokh returned by it from China to Herat. The diary of the embassy supplies the latest information we have concerning this Lob-nor route, though it can hardly have been entirely abandoned even after that time.†

It seems to me that the chief reason why the Chinese preferred the more circuitous and more difficult route, at all events for the section between Sha-chau and Lob-nor, to the one described by us lay in the fact that the Lob-nor route, after passing the desert tract already mentioned, lay through a continuous line of cultivated oases to the east of Sha-chau, and, moreover, that there were probably many more settlements

* This pass is crossed in order to avoid the difficult ascents and descents of the spurs of the Tokus-dawan, which lean on the left brink of the Cherchen-daria. There are said to be nine of these spurs; owing to this the range itself has been named Tokus-daban (or dawan), i. e. the nine passes.

† According to information collected by us on our last journey to Lob-nor, Dungan traders passed this way from Sha-chau till the last Muhammadan insurrection. They spoke of the road as very difficult, owing to the scarcity of forage and want of good water. The Lob-nor people also knew of the way to China by Cherchen and Gass. They called this road Kumiur-Saldy-yul, and told us of a tradition preserved in the country that upwards of 100 years ago (probably in the middle of last century, when the Chinese conquered Eastern Turkistan) detachments of Chinese troops passed along it to take part in the warlike operations against Khotan and others of the southern oases of the Tarim basin.

between Lob-nor and Cherchen than there are now. Even at a much later period there was an excellent station at the town of Lob. Besides which it is possible that in ancient times the tract of desert to the east of Lob-nor and between it and Sha-chau was less barren than at present. While, on the other hand, the Tsaidam marshes may in those days have been more inaccessible than they are now, and the nomad tribes inhabiting this region and Koko-nor may have attacked and plundered trading caravans with impunity, much as the Goliki (Kolos) do in Tibet.

All this is now changed. Owing to the general desiccation that has taken place all over Central Asia, the desert to the west of Lob-nor has become almost impassable, and the town of Lob has long since been destroyed. A caravan, therefore, starting from Sha-chau for the west would have to cross a waterless and barren tract 400 miles in extent before reaching the first oasis of Eastern Turkistan at Chargalyk, and beyond this, as far as the Cherchen-daria there is little water or forage to be obtained. The route we recommend is, therefore, the best under present circumstances, especially since our discovery of the navigability of the Tarim by small steamers all the way from Lob-nor to the confluence of the rivers of Yarkand and Aksu.

Return March.

Turning our backs upon the pass leading out of the Valley of the Winds we first made an excursion to the nearest parts of Mosco range, in order to ascertain the lower limit of the glaciers. M. Robarofsky and I proceeded on foot towards the glaciers, which appeared to be quite near. But it was only after climbing for nearly three miles up steep slopes, for the most part covered with bare detritus, in severe frost, and wind, that we at length reached the edge of a glacier and ascertained the height to be 15,500 feet above the ocean according to the barometer. It should, however, be noticed here that this particular glacier lay in a defile of the northern slope of the mountains.

Descending the Valley of the Winds was much easier than its ascent; first because we had the wind at our backs and the sun as we met it warmed us a little; secondly, because we had no survey to make. The shortness of the winter days, however, and the tired condition of our animals, obliged us to reduce the length of our marches. The weather was as cold as ever; but on the 6th and 7th January the atmosphere was filled with a thick dust, probably raised by the tempest, and this dust, warmed by the sun, quickly raised the temperature, so that, on the 8th of January, with an overcast sky, the thermometer rose to 46° Fahr. at 1 p.m. The cold, however, soon afterwards returned, though not so severe as before, doubtless partly owing to our having descended 2000 feet in altitude. We halted for two days at the sources of the Lower Zaisan-saitu, chiefly to hunt orongo-antelope, our stock of provisions

having run low. At our first *chasse* we killed twenty-three of these antelope, and then stopped, for we had no means of transporting so much meat. Two days later we kept New Year's day (13th January) on the Zaisan-Saitu in a modest way, thankful for all we had been able to accomplish in the past and all we might expect to achieve in the future.

The Climate in December.

Down to the 25th December we had been in the mountains, along the river Zaisan-saitu, in the vicinity of Unfreezing Lake, and for the rest of the month (and part of January) in the Valley of the Winds at elevations varying between 10,500 and 13,000 feet. We had experienced during this time severe cold, nearly constant winds, increasing at times to the force of a gale, and an absence of atmospheric deposits. In the Valley of the Winds calms had been exceptional, lasting only for an hour or two. At other times the wind blew day and night, mostly from the west and south-west, with great force. Every tempest was ushered in by a cloudy sky and whirlwinds sweeping down the valley.

For two-thirds of December the sky was generally clear, but towards the end of the month (i. e. beginning of January) it was continually cloudy. From the 6th to the 12th January, the weather being then calm the air was full of dust, and as already stated, the temperature rose to 46° Fahr. At the same time the barometer fell ·45 in., as compared with the reading at the same place a month before. On the night of December 31st (12th January) the mercury froze, and on eight days during the month the frost exceeded −22° Fahr. at sunrise; on six other days the thermometer showed −18° Fahr., and even at 1 p.m. stood at zero Fahr. Were it not for the westerly winds, the cold might have been even greater; yet with all their moderating influence, the daily temperature for the month averaged 5° Fahr., a trifle lower than that observed for the same month in 1872 on the plateau of Tibet, between the Shuga river and the Kuitun-shirik marsh, at an elevation of 13,500 to 15,000 feet above the ocean, and only a little higher than the average for December 1879 (3° Fahr.) when we were on the Tang-la range, and on our way thence to the Dunbure range * at an elevation of 14,500 to 16,500 feet.

Snow fell only six times during the month, in quantity just sufficient to whiten the ground, even in the mountains only lying to a depth of an inch or two, while in the valley it was soon blown away by the wind, and mingled with sand and dust so as rapidly to disappear.

Excursion to the River Khatyn-zang.

On the 14th January, I despatched two Cossacks and some luggage camels to our depôt at Chong-yar, while the rest of us made an excursion

* The Dungbura of A. K.

up the river Khatyn-zang, in order to clear up finally any doubtful points relating to the orography, and explore this river, which as already stated, fails to reach the Zaisan-saitu by seven miles. Having travelled thus far, we came to broad sheets of ice formed by the constant though feeble flow of water. Along both banks there is a dense growth of *Myricaria*; *Elymus*, *Clematis*, and *Ephedra* appeared in places, while on the sand we observed a thorny *Oxytropis*. Unfreezing springs force their way to the surface among these bushes. The Khatyn-zang forces its way through Tsaidam range by a short though tolerably wide defile; higher up it divides with its wide valley, the Columbus and Tsaidam chains, the level of the ground rising considerably towards the east where clay hillocks cover the surface. The westerly continuation of this valley continues to divide the two ranges we have named as far as the gorge of the Zaisan-saitu, while on the east beyond the Khatyn-zang where this river forms an elbow after its descent from its sources in Mount Jing-ri, the valley expands, and is gradually lost in the barren plains of Tsaidam. A little before this the Baian-gol, also issuing from the same glaciers of Jing-ri, enters the valley, and flowing for a short distance in the direction of Tsaidam is soon lost in the soil. The whole length of the valley is 180 miles, its best parts lying along the Khatyn-zang, this river also occasionally disappearing for short intervals underground. Here we found *balga-moto* and *kolosnik* (? tamarisk) up to an elevation of 12,000 feet above the sea, here too, creeping *Myricaria*, a species of rhubarb, a few grasses, and tufts of *Oxytropis* occur.

The soil in those parts of the valley nearest to the river consists of loess, sand, and small pebbles, affording sustenance to a few bushes of *Artemisia*, *Reaumuria*, camel-thorn, and an occasional *Ptilagrostis* and *Statice*. The wild ass frequents these tracts, while the argali (*Ovis Dalai-Lamæ* n. sp.), yaks, and the orongo-antelope are also occasionally met with. Hares and smaller rodents are scarce. Among birds, besides those common to the whole of this country, and already repeatedly mentioned, we observed the Saksaul chough (*Podoces Hendersoni*) and a pair of *Podoces humilis*, the hedge-sparrow (*Accentor fulvescens*), mountain finches (*Erythrospiza mongolica*, *Passer Stoliczkæ*), and by the springs the solitary snipe (*Scolopax solitaria*). In summer gold-miners visit this region, and we saw traces of their camps.

Along the Khatyn-zang lies the route, now almost abandoned, of the Western Mongol pilgrims to Lhassa viâ Lob-nor. Having crossed the Altyn-tagh, these pilgrims keep along the western border of Gass and the lower Zaisan-saitu to the Khatyn-zang. They probably cross Columbus range in the region between its snowy part and the meridian of the east end of Unfreezing Lake.* Farther particulars of this route we were unable to obtain, and it was only afterwards that we learned that a few

* Probably by the Amban-Ashkan Pass crossed by Carey.

years ago a party of about 100 Torgute pilgrims travelled to Tibet and back by this route, and that seven of them died on the road.

From the bend of the Zaisan-saitu we marched 53 miles up the Khatyn-zang. We went no farther, for our horses were by this time quite tired and our stock of provisions nearly exhausted. But in order to survey the country ahead of us as far as possible, I rode forward alone from our last bivouac to the border of Tsaidam range, not far distant from us. Having ascended this for 1500 feet, I took all the necessary compass bearings. While engaged in this way I was favoured by a few hours of fine weather, and could see very distinctly the distant peaks both up and down the valley. On the south-east Jing-ri reared its giant form, outlined on the light blue background of the sky as though reflected on a mirror. To the westward of it lay the crest of the range, covered with huge glaciers for nearly twenty miles, probably the commencement of Columbus range. Towards the E.S.E. our valley disappeared altogether beyond the horizon, while immediately below lay the frozen Khatyn-zang like a riband of silver till a sharp turn to the south hid its sources in the mountains from my view. North of my position rose the snowy group of Tsaidam range, obstructing the distant horizon in this direction.

Having thus cleared up the position of the ranges and their bearings to one another and to the Khatyn-zang valley, I returned to camp.

Return to Our Depôt.

Had we been able from our farthest point on the Khatyn-zang to cross to the northern side of Tsaidam range we should have saved half the distance. But this being impossible, we had to retrace our steps. This, however, did not weigh heavily upon us, for we were looking forward to arrive shortly at our depôt, where we hoped to rest awhile after our fatigues and hardships, refresh ourselves with better food than we had lately been having, and allow our jaded beasts to enjoy their well-earned repose.

With these prospects before us we made three marches back along the Khatyn-zang, and two more across the waterless tract separating us from Chong-yar, and on the 23rd January, 1885, once more rejoined our companions from whom we had been absent fifty-four days, during which we had travelled 523 miles, and explored one of the least known parts of Central Asia.

At the depôt we found all well, the Cossacks in good health, the camels left behind thoroughly rested and in good condition. This was most important for us, as we could not hope to obtain fresh ones in the basin of the Tarim, as the event indeed proved. Our horses, however, were not fit for much, and four of these animals had to be abandoned.

As for ourselves, we lost no time in improving our personal appear-

ance, which had suffered from the rough life we had been leading. Shaved, washed, and regaled with the best of our provisions, we looked more like civilised men, and soon forgot the disagreeable experiences we had gone through in the cheering retrospect of success achieved. Three days were devoted to repacking, drying collections, writing up journals, &c., and then we bade good-bye to our excellent camping ground, and turned our faces northwards towards Lob-nor, following the route we had explored the previous autumn.

From Gass to the Altyn-tagh.

The day after leaving Chong-yar we crossed, in its narrowest part, that chain of mountains which forms a continuation of the Chamen-tagh, and stretches east-north-east for 106 miles, probably to its junction with the Altyn-tagh, or if it do not reach so far, is only separated from it by a short interval. Having been unable to learn of any local name, we called this chain "the Nameless," especially as in 1877 the people spoke to us of nameless mountains near the Altyn-tagh.* Their general features are aridity and barrenness. In their western part they are considerably lower, and flank the district round Gass. In the centre and farther east they rise approximately 13,000 to 14,000 feet above the sea, and are bordered here by the desolate wilderness of North-western Tsaidam, where, as already stated,† the country is a confused network of bare hills, and still more barren plains.

The pass over the nameless range, where we crossed it in its western part, is only from 700 to 800 feet above Gass. The ascent is gradual; the descent, however, on the opposite side is much steeper, and for a mile or two lies along a narrow defile, where the rocks are composed of conglomerate and schist much disintegrated and covered with loess. In places, particularly towards the east, there appear to be thick beds of loess.

To the west of this pass there is a wide hollow filled with salt marshes. Along its southern verge, towards the snowy parts of Chamen-tagh range, springs are abundant, and form the briny and unfreezing lakelet of Gashun-nor. By the side of these springs we found a little grass and thick reeds growing, the last mentioned having been trampled under foot and devoured by the wild ass.

Having supplied ourselves with ice at the springs of Gashun-nor, we struck out across the wide valley already mentioned, stretching for 100 miles east and west. The light soil consists of loess and pebbles. Neither water, vegetation, nor animal life are to be found here, though we saw foot-prints of wild camel. The valley where we crossed it in a direction due north to the southern foot of the Altyn-tagh has a breadth of about

* Cf. "From Kulja to Lob-nor," p. 82, *seq.*

† In a previous chapter of his book.

26 miles, and continues of this width westward, narrowing a little towards the east. Its elevation above the sea is between 10,000 and 11,000 feet along our line of march.

We were two days crossing it, following on the second day the track of the natives of Lob-nor when they go to Gass. This too is the road frequented—in former days oftener than now—by Torgute pilgrims to Lhassa. We actually saw here an old wheel track, probably of some great Lama or rich prince, who had gone to pray at the holy city. Wherever the nature of the country does not admit of the passage of these two-wheeled vehicles, they are taken to pieces and carried on a pack-saddle. To this day high Mongol dignitaries travel in this way from Urga to the capital of the Dalai Lama.

Passage of the Altyn-tagh.

The Altyn-tagh, repeatedly mentioned in the preceding pages, at the foot of which we now found ourselves, was discovered by me in 1876, on my expedition to Lob-nor. The meaning of its name is 'golden range,' probably given it owing to the quantity of gold found here. With a general W.S.W. by E.N.E. direction, this chain stretches for nearly 470 miles from the headwaters of the Cherchen to the snowy group of Anembar-ula near Sha-chau. Here the Altyn-tagh unites with the Nan-shan, while on the west it closes on the Tokus dawan and its continuations, thus forming the central part of a continuous rampart of mountains bordering the highlands of Tibet on the north, and reaching from the Upper Hwang-ho to the Pamir. Like all these ranges, the Altyn-tagh has only a short slope towards the plateau, while on the Lob-nor side its mountain scenery is fully developed. Though it only reaches the snow-line in its western part near the source of the Cherchen, the average elevation of the Altyn-tagh is nevetheless very great, and it is rugged and inaccessible throughout. Of the passes leading across it we only know the one by which we now descended. But there is said to be another pass farther west by the river Djahansai,* difficult of access with donkeys and horses. There may be other footpaths across the range, but in any case these can be but few in number, and all are impracticable for camels.

Among the characteristic features of the Altyn-tagh are its lofty, loess-covered valleys,† barren and waterless, lying parallel with the main axis of the chain, and the general absence of running water in the range. Springs are rare, and for the most part supply water of a bitter saline taste. Besides the Cherchen-daria, which, as we have said, winds round the western angle of the Altyn-tagh, the following streams occur,

* Crossed by Messrs. Carey and Dalgleish (probably the Sai of Mr. Dalgleish's Itinerary, p. 32).

† The largest of these valleys known to us is Bektar, 10 or 12 miles north-east of the Kurgan-bulak.

taking them in their order and beginning on the west—the Vash-sharidaria, Chargalyk-daria,* Djahansai-daria, Kurgan-bulak, and Djaskansaidaria. The eastern parts of the Altyn-tagh, hitherto unexplored, are in all probability even more deficient in water.

As one might infer from the aridity of this range, due to the absence of snowy summits and small rainfall, vegetable and animal life are very deficient. In 1877, when we passed the whole of January in them, we only found 13 kinds of mammals and 18 varieties of birds,† all being similar in kind to those met with in the ranges bordering the Tibetan plateau. There are no inhabitants in the Altyn-tagh, but in summer and autumn hunters come hither from Lob-nor and Chargalyk.

In the direction we took, the southern slope of Altyn-tagh is only a few miles wide, and the ascent from the Tibetan side imperceptible. The summit of the descent is 11,000 feet above the sea. The chief axis of the range, marked by a ridge of lofty rocky eminences of black limestone and marble, is about three miles farther north, and is intersected by the narrow gorge by which we descended. It was difficult marching with camels, for here and there masses of sedimentary deposits had broken away from the sides and obstructed the road. But these were the only obstacles encountered. The valleys and slopes of the upper belts are covered with loess. No water could be found for the first 10 miles from the pass,‡ and the desolation was appalling. The only plants growing here are stray specimens of Reaumuria, bush Artemisia, camelthorn, and an occasional clematis. We saw no birds of any kind. Among animals the wild goat (Pseudo Nahoor) and argali (Ovis Dalai Lamæ) inhabit these mountains, and wild yaks and camels occasionally enter them. Snow only lies on slopes facing the north, and even here in small patches.

After we had descended 3000 feet in 17 miles, we came to the source of the Kurgan-bulak or Kurgan-sai, at the place where our route crossed it in 1877. Then we went 62 miles farther in an easterly direction towards Sha-chau, finding the road exceedingly difficult for camels and the region barren and waterless. This is, however, a better route than that across the arid Kum-tagh sands from Lob-nor to that oasis.

Finding good pasturage for our camels in the defile of the Kurgansai, we halted for a day, experiencing that night, notwithstanding the lower elevation, frost of −21° Fahr., a greater cold than any we had yet felt, even on the other side of the Altyn-tagh. But as soon as the sun

* Perhaps flows from the Chamen-tagh.

† All these are enumerated in my book, "From Kulja across the Tian Shan to Lob-nor." The only correction to be made is that instead of Ovis Poli we have Ovis Dalai-Lamæ; instead of Podoces Tarimensis we have Podoces Hendersoni, and see the work referred to for further general information.

‡ I.e., for 48 miles from the springs near Gashun-nor we had come across no water.

rose and warmed the atmosphere, the thermometer rose rapidly, and by 1 p.m. showed 33° Fahr. in the shade.

On a hill near our camp were the ruins of a small mud fort,* which had formerly served to close the passage, and we learned that similar works of ancient construction may be seen in the other defiles of the the Altyn-tagh.

In the following two marches we descended the Kurgan-sai to where it issues from the range at an elevation of only 5800 feet. The Kurgan-bulak, as this stream is otherwise called, flows in an eccentric way, now above, now below the surface, finally disappearing altogether at the foot of the mountains. Its water has a bitter saline flavour. In those parts of the defile where accumulations of ice were piled up, we had to sprinkle earth or sand on the track to enable our camels to keep their footing. The sides of this gorge are high and rocky, composed of granite, dolomite, and hornblende; lower down there are fewer crags, and marble is the prevailing formation; lastly, the verge or skirt of the mountains towards Lob-nor is covered with hillocks of pebbles and loess.

The mountains we are describing are quite barren, but in the ravines there grow *Myricaria* (*M. Germanica* var.) at heights of 7000 to 9000 feet, and lower down tamarisk (*T. laxa*?); 500 feet lower still we found variegated poplar (*Populus diversifolia*), called by the natives *tugrak*. In the same defile we came across Kharmyk (*Nitraria Schoberi*), a species of *Lycium*, a fruit-bearing *Ephedra*, *Halostachys Caspia*, 7 feet high, a species of *Zygophyllum* in the higher belts, a species of *Hedysarum*, *Reaumuria*, camel-thorn, an abundance of common reeds (*Phragmites communis*), *dirisun*, in the Turki dialect, *chii* (*Lasiagrostis splendens*) in small quantities, *jerukha* (a species of *Lepidium*), *Carelina Caspia*, and, on issuing from the mountains, *jantak* (*Alhagi camelorum*).

The only animal we saw was the common wolf. We also observed traces of the leopard, tiger, and wild boar. The birds are few in number, the *keklik* (*Caccabis chukar*), jackdaw (*Fregilus graculus*), crow (*Corvus corax*), *Accentor fulvescens*, *Leptopœcile Sophiæ*, and a redstart, probably wintering. Judging from the accumulations of drift brushwood in the windings of the defile, the rains in summer, though rare, are heavy in these mountains.

Arrival at Lob-nor.

On issuing from the gorge of the Kurgan-sai, our farther route lay in a west-north-west direction across a wide plain, sloping gradually from the foot of the Altyn-tagh to Lob-nor. In two marches, with a night's rest between, we accomplished the thirty-five miles of waterless tract and reached the spring of Astchi-bulak. For the first five miles after leaving the Kurgan-sai, we passed a succession of clay hillocks,

* Kurghan in Turki, Khyrma in Mongol.

and on their border came to one of our camping grounds in the winter of 1877. Eight years had elapsed since then, yet we were able to recognise without difficulty the spot where our felt tent had been erected and the camels had been tethered; the cooking stove was intact, and even the spare fuel remained as we left it.

The soil of the plain over which we next marched consists of bare pebbles, loess, and sand; here and there were stones fashioned by the storms into all kinds of curious shapes, such as saddles, shoes, dishes, &c. We occasionally crossed the dry beds of mountain torrents, showing us the direction taken by the few rain-water channels. The plain itself is barren, except near the mountains, where scattered clumps of gnarled Saksaul, *Calligonum*, *Reaumuria*, and *Ephedra* grow. The well-beaten track is marked by piles of stones (*obo*), some of great size.

At Astchi-bulak, a bitter saline spring, we descended to the level of Lob-nor, i. e. 2600 feet above the sea, the lowest point we had reached since leaving Kiachta. It certainly was warmer here, though the winter had been generally a severe one at Lob-nor, and some snow had fallen. Even yet in shady nooks there lay snowdrifts.

From Astchi-bulak we marched seven miles to the southern shore of Lob-nor, and then 18 miles along this shore over execrable ground, where the surface was encrusted with salt and corrugated like the frozen surface of a troubled sea. A belt of this saline formation, seven miles wide, extends for a breadth of seven miles along the southern shore, as far as we went, having evidently formed the bed of the lake at some previous time; towards the east this saline encrustation is probably wider. Lob-nor itself was entirely covered with ice a foot thick. In 1877 the frozen part, clear of reeds, parallel with the south shore, had been about a mile or two in width. Now it was only half that breadth, owing to the shrinkage of the lake. We gladly observed here the first harbingers of early spring—a small flock of ducks and two of swans. The people did not show themselves, though occasional columns of smoke might be seen rising from the reeds, indicating the habitations of man. The natives, as we afterwards learned, had hidden in the reeds on our approach. . . .

By reaching Lob-nor, I had closed upon the third line of my travels in Central Asia. All three, starting from various points of the Russo-Chinese frontier, had Tibet for their objective. The first was directed from Kiachta through Urga, Ala-shan, Kan-su, Koko-nor, and Tsaidam; the second from Kulja through Yuldus, Korla, Lob-nor, and Gass; the third from Zaisan through Hami, Sha-chau, and Tsaidam. Lastly, in 1885, our fourth journey also led from the border of Semiretchia through Ak-su and Khotan.

River Di-chu (Upper Yang-tsze-Kiang, North-eastern Tibet).

POSTSCRIPT.—Since the foregoing pages were printed, Mr. W. W. Rockhill's communication on his attempt to reach Lhassa in 1889 has been published in our 'Proceedings,' (Dec. 1889, p. 730). In speaking of the sources of the Yellow River, he says there is no lake called Oring-nor east of the Ts'aka-nor, but one called Tsaga-nor: the former meaning "salt lake," the latter having apparently no meaning, at all events as far as he could learn. The close resemblance of these two names is confusing, and throws a little doubt on the correctness of Mr. Rockhill's information, especially as the names mentioned by Prejevalsky are identical with those given in d'Anville's atlas, founded, as we know, on the surveys of the Jesuits in Kien Long's reign. Neither is there any evidence of the salinity of one of these lakes as implied by its name. On the contrary Prejevalsky speaks of them as *freshwater* natural reservoirs of great importance to the internal economy of China. The circumstance of their receiving the drainage of the surrounding country and of their discharge by the Yellow River, is in itself a strong presumption of the sweetness of their water.

Mr. Rockhill's criticism on Prejevalsky's want of energy had better have been spared, for whatever his faults lack of energy was not one of them. He might, no doubt, have exchanged his camels for ponies and crossed the Di-chu, but he would probably not have had better success than Mr. Rockhill in advancing into that jealously guarded lama-ridden country, besides risking in the attempt the precious results of the whole expedition. With regard to the Mongols of Tsaidam, many particulars are given in Prejevalsky's earlier works.

The nomenclature of the ranges south of Lob-nor on the map will be found to differ from Mr. Dalgleish's itinerary, the cause being that this traveller's names do not agree with those given by Prejevalsky. I have preferred following the latter, as, being better provided with native guides, he was more likely to have been correct. The "Altyn" or "Altun-tagh" of Dalgleish must therefore be understood to refer to Prejevalsky's "Chamen-tagh," and Dalgleish's "Chiman-tagh" to Prejevalsky's "Columbus range." A note on this subject appears in a recent number of the 'Proceedings' (1889, p. 375).—M.

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W. & A.K. Johnston, Edinburgh & London.

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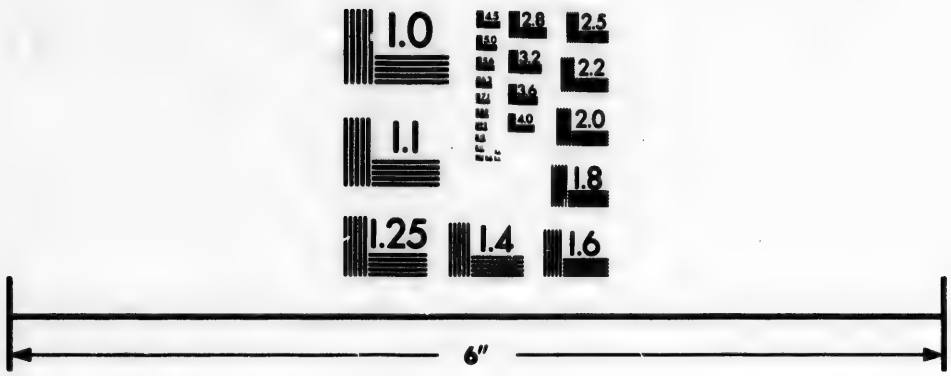

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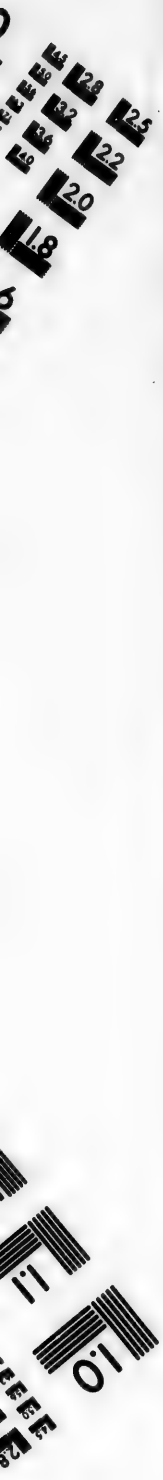
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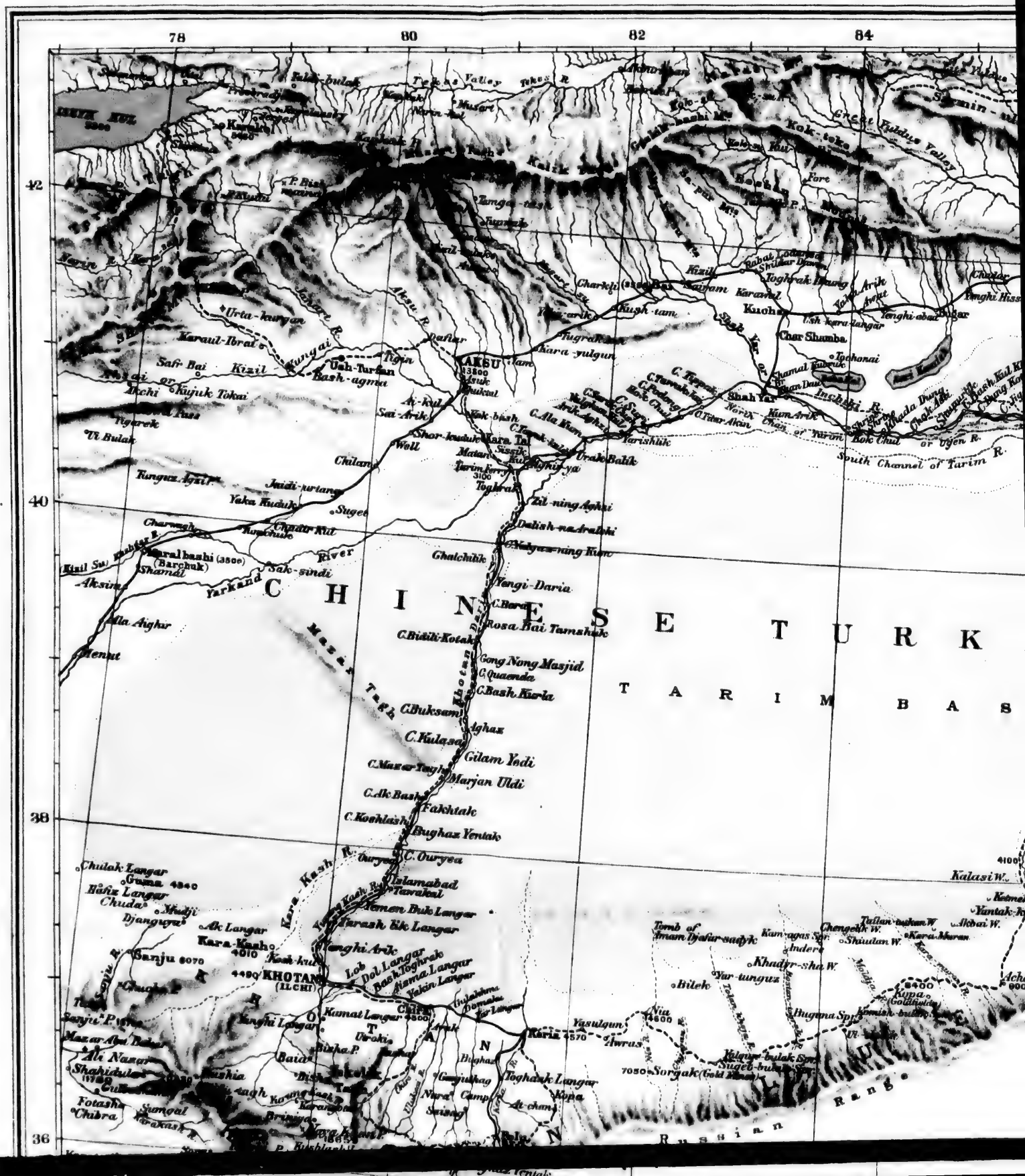
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ISSYK KUL
Kuldja
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Kashgar R.
Kizil Su
Yarkand
Aksu
Aksu R.
Tekes Valley
Tekes R.
Musart
Kok-tokai
Great Yuldus Valley
Kizil
Kuchar
Shah Yar
Char Shamba
Tochanai
Bugur
Yengi-abad
Yengi-Hissar
Urta-kurgan
Karaul-Ibrat
Safi Bai
Kizil
Kungai
Ush-Turfan
Bash-agma
Akchi
Kujuk Tokai
Tigarek
Ul Bulak
Tunguz Agzi
Jaidi-yurtang
Yaka Kuduk
Suget
Charmagh
Maralbashi (3500)
(Barchuk)
Shamdi
Kizil Su
Aksina
Yarkand
Sak-sindi
River
Ala Aighur
Menut
C H I N E S E
T U R K
T A R I M B A S
Mazar Tagh
Khotan Dj.
Kara-Kash R.
Kara-Kash
Sanju
Chuda
Djangyul
Abe Langar
KHOTAN
(ILCHI)
Yengi Arik
Dol Langar
Bash Toghrak
Asma Langar
Yakin Langar
Kamat Langar
Urokia
Baida
Bisha P.
Ali Nazar
Shahidula
Fotasha
Chibra
Sumgal
Kara-kash R.
Chulak Langar
Gama
Hafiz Langar
Kara-Tash
Tarakal
Keria
Yasulgun
Awras
Sorgak (Gold Mines)
Toghrak Langar
Kopa
Nia
Bugana Spr.
Bilek
Yar-tunguz
Khadyr-sha W.
Tomb of Imam Djafar-sadyk
Kalasi W.
Yantak
Akbai W.
Kara-Muran
Shiudan W.
Chengelik W.
Indere
Kum-agas Spr.
Tullan-bulak W.
Kopa (Gold Mines)
Russian
Rang.
Tagh
Tagh
Tagh

84
86
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Urumchi
Dawan-shan
TURFAN
Pichan
KARASHAHR
Kurtak Tagh
Kuruk Tagh
Kuenchi-Akchigh
Kuenchi Mazar
Kuenchi Sala
Kultokmit Kul
Aghiz Kais Kul
Yengi Kul
Khaga Asta
Chigalik
Kirchin
Achik
Yata Bolda
Kara Dai
Arghun
Tokam
South Channel of Tarim R.
KUM-TAGH SANDS
LOB NOR LAKE
Kara-kurchin
Tukmak-kiul
Uitong
Kara Buran
Jan-Bulak
Chakur Sai
Chakilik
Chargalik
Yakub-bai W.
Cherchen Daria
Chapan kaldy W.
Ushur W.
Vash-shari
Akra-tugrak W.
Tatran
Cherchen
Ruins of old Town
Kalasi W.
Ketmek
Yantak-kuduk
Akbai W.
Kara-muran
Shiudan W.
Achan
Kopa
Tokus daban
Valley of the Winds
Chamen Tagh
Namelessness Range
Columbus
Chong Kum Kul
Ikhyn-gasyn-khorgu
Gahun Nor
Urtyn Nor
Tartyn W.
Bumba
Arshanti
Sandy Tableland
Camp
C. Bokalik
Tochak
C. Bulantai
Galechan-bulak
Khuitun Nor
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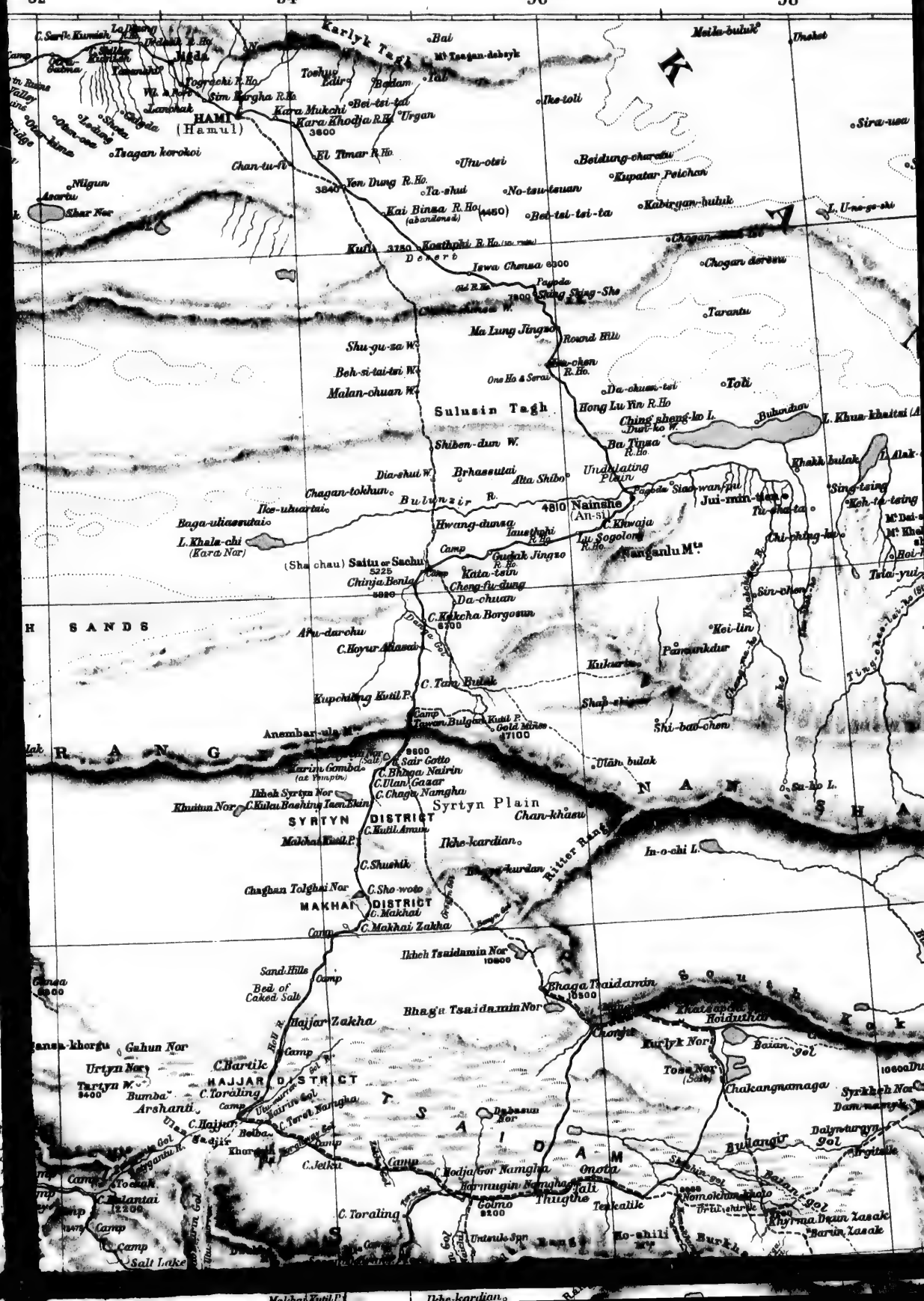
L. Khala
Nilgun
Shar Nor
Tsagan korokoi
Algoi R.
Kurkistan
Basin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Karlyk Tagh
HAMI
(Hamul)
Kara Khodja R.Ho
Kai Binsa R.Ho
(abandoned)
Desert
Iswa Chensa
Sulusin Tagh
Shiben-dun W.
Malan-chuan W.
Undulating Plain
Nainshe
(An-si)
Bulunzir R.
Saitu or Sachu
(Sha chau)
Nanganlu Mts
Syrtyn Plain
SYRTYN DISTRICT
MAKHAI DISTRICT
HAJJAR DISTRICT
Ritter Range
Bhaga Tsaidamin Nor
Chongja
Kurlyk Nor
Tosun Nor
Chakangnamaga
Bulangir
Onota
Thugthe
Golmo
Salt Lake
Ko-shili
Burkh
Sand Hills
Bed of Caked Salt
Hajjar Zakha
Gahun Nor
Urtyn Nor
Tartyn W.
Arshanti
Bumba
C.Bartik
C.Toraling
C.Hajjar
C.Jelku
C.Toraling
Ikheh Tsaidamin Nor
Chaghan Tolghai Nor
Ikheh Syrtyn Nor
Khuitun Nor
L.Khala-chi
(Kara Nor)
Baga-uliassutai
Chagan-tokhun
Hwang-dunsa
Ma Lung Jingso
Round Hill
Hong Lu Yin R.Ho
Ba Tinsa R.Ho
Brhassutai
Alta Shibo
Dia-shui W.
Shu-gu-za W.
Beh-si-tai-tsi W.
Tarantu
Toli
Da-chuan-tsi
Chogan dersun
Sira-usa
Tsagan korokoi
Mugun
Asartu
Shar Nor
Beidung-charatu
Kupatar Peichan
Kabirgan-buluk
L. U-ne-go-shi
Meila-buluk
Dunhet
Ike-toli
Bei-tsi-tsi-ta
No-tsu-tsuan
Ta-shui
Utu-otsi
Yen Dung R.Ho
El Timar R.Ho
Chan-tu-ti
Toshuo
Edir
Bedam
Bei-tsi-tsi
Urgan
Sim Kargha R.Ho
Togrochi R.Ho
Jarshak
Tamenshik
Kuitun
Kosthphi R.Ho
Ta-chen R.Ho
One Ho & Serai
Ching sheng-ko L.
Buhordun
L. Khua-khaitsi
Khakh bulak
Sing-tsing
Koh-ta-tsing
Jui-min-tien
Tu-cha-ta
Chi-ching-ko
Sin-chen
Kei-lin
Pamankdur
Kukurtu
Shi-bao-chen
Ulan bulak
Sa-ho L.
In-o-chi L.
Ikhe-kardian
Chan-khasu
Chanja
Kurlyk Nor
Tosun Nor
Baian gol
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Nomokhun-chaio
Khyrma Dsun Zasak
Barin Zasak
Anembar-ula Mts
Kupchiling Kutil P.
Tawen Bulgan Kutil P.
Gold Mines
Marin Gomba
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C.Sair Gotto
C.Bhaga Nairin
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C.Chaga Namgha
C.Kutil Amun
C.Shushik
C.Sho-woto
C.Makhai
C.Makhai Zakha
C.Hoyur Ahasai
C.Kokcha Borgosun
C.Tara Bulak
Afu-darchu
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Gudak Jingso
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Chakangnamaga
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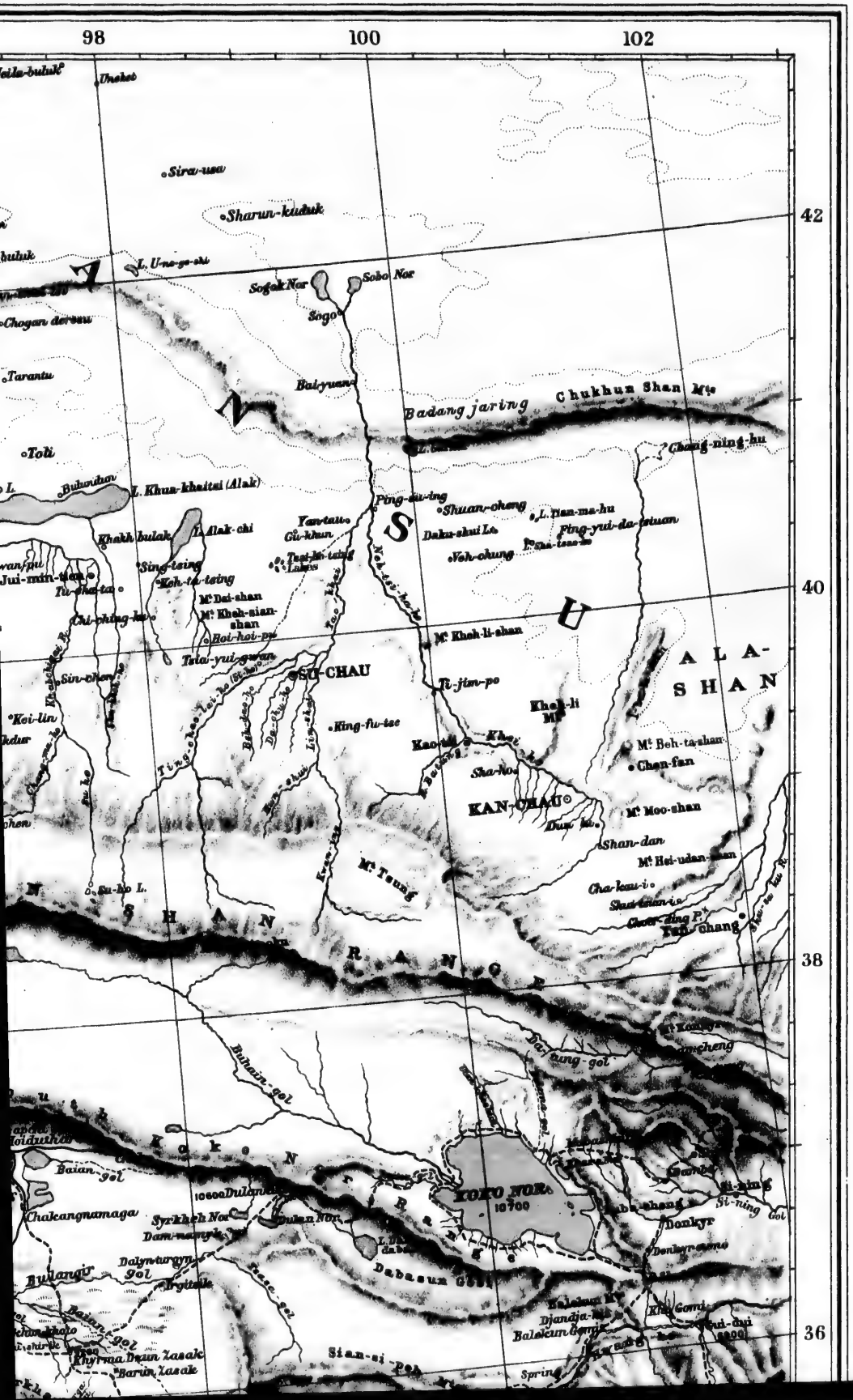
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Sira-usa
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Tarantu
Bai-yuan
Badang jaring
Chukhun Shan Mts
Chang-ning-hu
Toli
L. Khua-khaitsi (Alak)
Ping-su-ing
Shuan-cheng
L. Tian-ma-hu
Ping-yui-da-tsiuan
Khakh bulak
L. Alak-chi
Yan-tau
Gu-khun
Daku-shui L.
Veh-chung
Sing-tsing
Keh-ta-tsing
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Tu-cha-ta
Mt Dai-shan
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Hoi-hoi-pu
Tsia-yui-gwan
Mt Kheh-li-shan
SU-CHAU
Ti-jim-po
Sin-chen
Kei-lin
King-fu-tse
Kheh-li Mts
Mt Beh-ta-shan
Chen-fan
Sha-ho
KAN-CHAU
Mt Moo-shan
Shan-dan
Mt Hei-udan-shan
Mt Tsung
Su-ho L.
Cha-kau-i
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Dabasun Gol
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Djandja-ho
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Spring
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Barun Zasak

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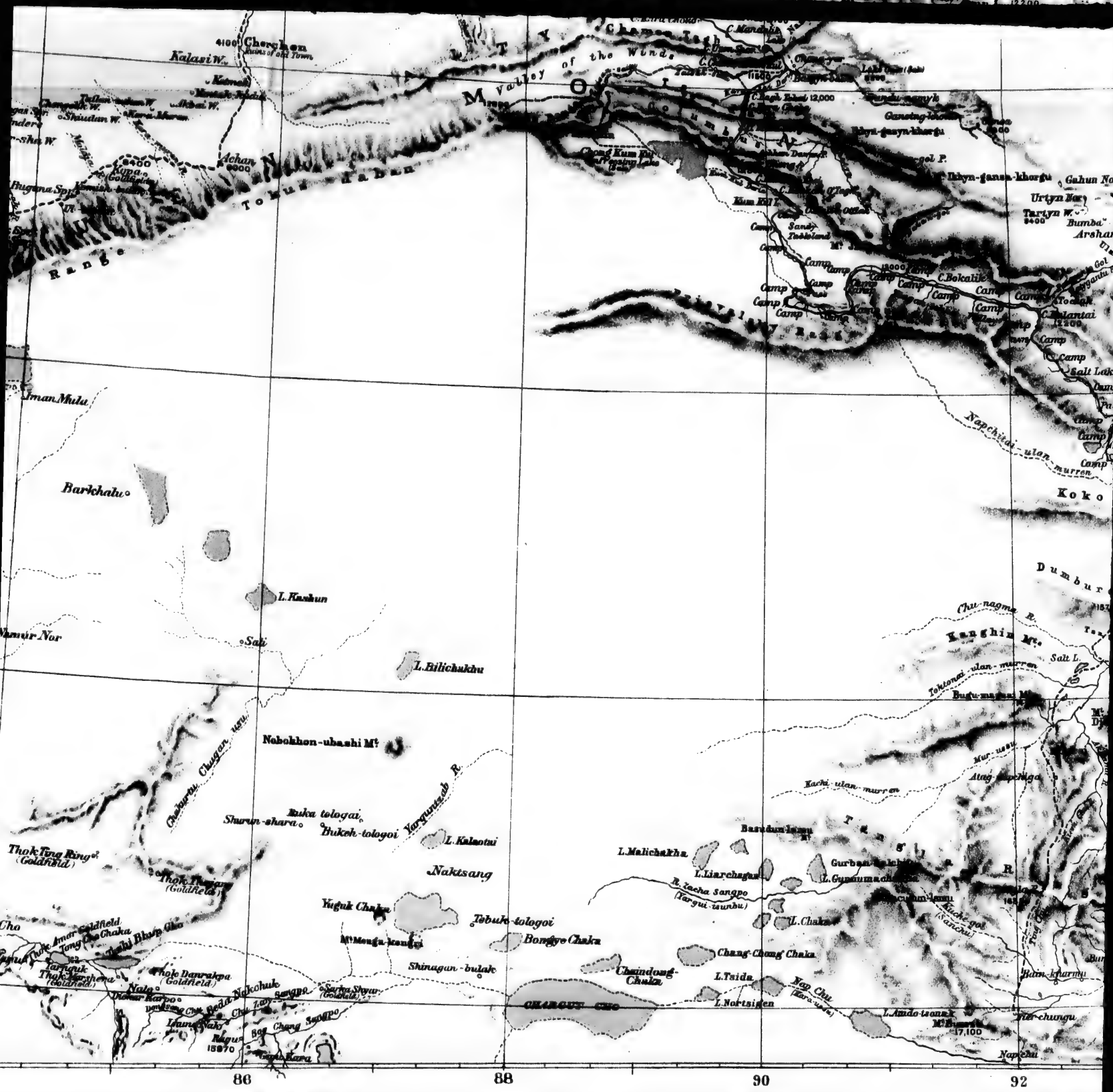

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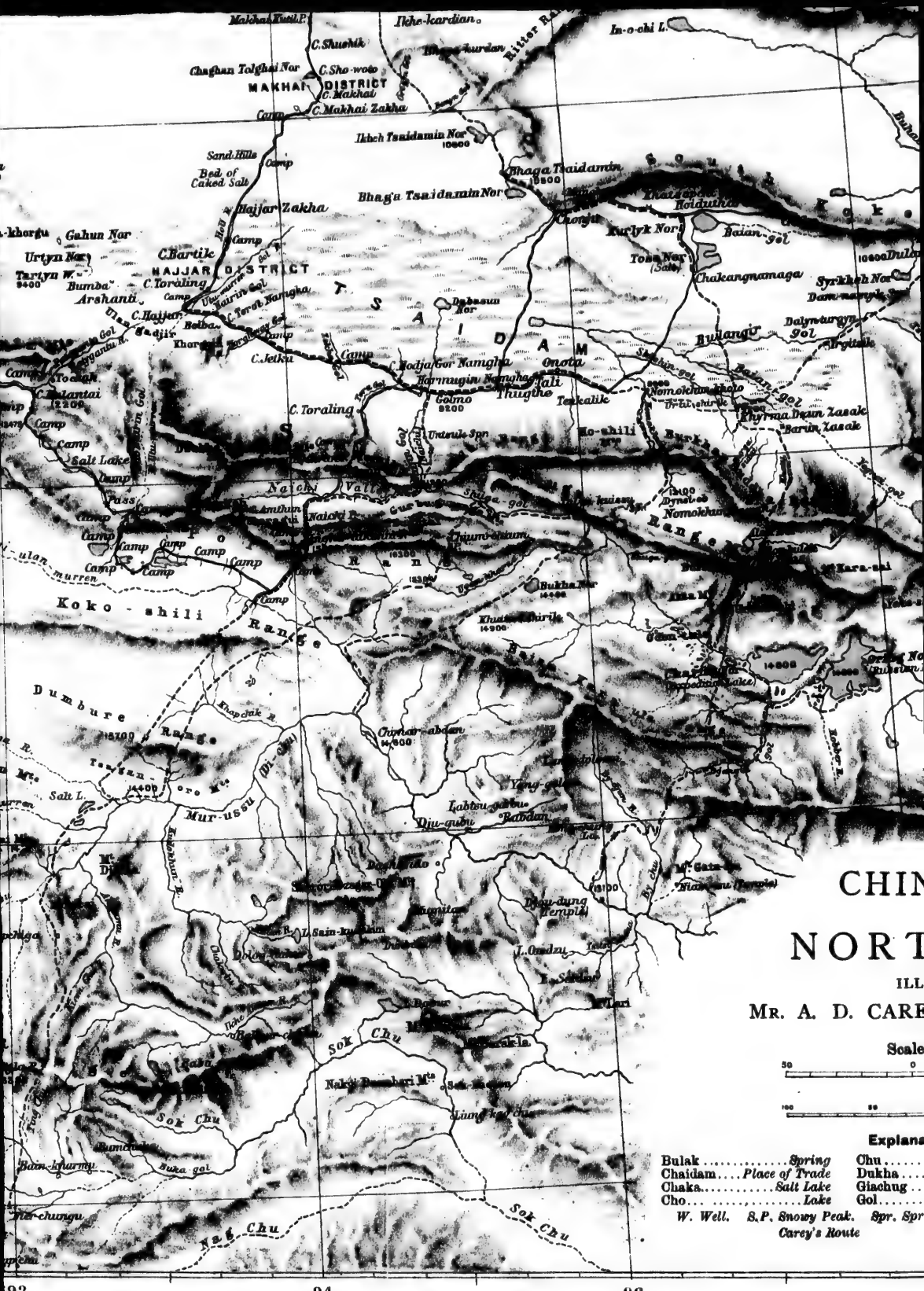
CHIN
NORT
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MR. A. D. CARE
Scale
Explana
Bulak ..... Spring
Chaidam .... Place of Trade
Chaka ..... Salt Lake
Cho ..... Lake
Chu .....
Dukha ....
Giachug ..
Gol .....
W. Well. S.P. Snowy Peak. Spr. Spr
Carey's Route
MAKHAI DISTRICT
HAJJAR DISTRICT
TSAIDAM
Koko-shili Range
Dumbure Range
Mur-ussu
Sok Chu
Naé Chu
Naichi Valley
Salt Lake
Salt L.
Urtyn Nor
Gahun Nor
Arshanti
Bhaga Tsaidamin Nor
Ikhch Tsaidamin Nor
Kurlyk Nor
Toson Nor
Chakangnamaga
Bulungir
Onota
Thugthe
Golmo
Bukha Nor
Baian-gol
Dulan
Syrkheh Nor
Dalyn-aurgyn gol
Nomokhun-khoto
Barin Zasak
Ko-shili
Nomokhun Range
Kara-shi
Yang-gol
Labtsu-gubu
Dju-gubu
Bathdam
Dju-dung Temple
Bain-khurmu
Bura gol
Sand Hills
Bed of Caked Salt
Hajjar Zakha
C. Bartik
C. Toraling
Arshanti
C. Hajjar
C. Jetkul
C. Toraling
Salt Lake
Pass
Camp
Ilche-kardian
In-o-chi L.
Ilkhe-kardian
C. Shushik
C. Sho-wood
C. Makhai
C. Makhai Zakha
Chaghan Tolghai Nor
Makhai Kutil P.
Bitter R.
Khaidam
Holdutha
Chonja
Tosa Nor
Dabasun Nor
Namgha
Harmugin Namgha
Tali
Terkalik
Ilkhe-kardian
Khaidam
Khaidam Kokoshili
Khaidam Kokoshili Range
Khaidam Kokoshili Range
Khaidam Kokoshili Range

CHINESE TURKISTAN
AND
NORTHERN TIBET

ILLUSTRATING THE JOURNEYS OF

MR. A. D. CAREY AND GENERAL N. M. PREJEVALSKY

Scale of English Miles—One inch = 60 miles

50 0 50 100 150

Scale of Russian Versts

100 50 0 100 200

Explanation of Tibetan and Mongolian Names.

k	Spring	Chu	River	Gomba	Monastery	Tang	Plain
lam	Place of Trade	Dukha	Ferry	Khyrma	Fort, Enclosure	Thok or Sarka	Goldfields
a	Salt Lake	Giachug	Rest House	La	Pass	Ula	Mountain Range
	Lake	Gol	Stream or River	Nur	Lake	Ussu	River

Well. S.P. Snowy Peak. Spr. Spring. R. Ho. Rest House. P. Pass. Mt. Mountain. L. Lake. Br. Bridge.

Carey's Route *Prejevalsky's Route*

Heights in feet.

W. & A.K. Johnston. Edinburgh & London.

A JOURNEY THROUGH PERSIA

(1887–88).

By Lieut. H. B. VAUGHAN, 7th Bengal Infantry.

With Notes by Major-General Sir FREDERIC GOLDSMID, C.B., K.C.S.I.

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A JOURNEY THROUGH PERSIA

(1887–88).

By Lieut. H. B. Vaughan, 7th Bengal Infantry.*

With Notes by Major-General Sir Frederic Goldsmid, C.B., K.C.S.I.

Leaving Karachi by steamer, I travelled up the Persian Gulf and landed at Linga on the 13th December. Linga is a small seaport on the southern coast of Persia, lying to the south-west of Bander Abbas. As it is a place already well known it is unnecessary to describe it here.† I remained there for four days, gathering as much information as I could of my intended route, obtaining transport, and completing my outfit.

This latter consisted of a 40-lb. tent, Cabul pattern, a camp table, camp bed, camp chair, lantern, box of clothes, box containing surveying instruments, medicines, and drawing materials, saddle, rifle, two revolvers, and a roll of bedding strapped up in a waterproof sheet, with an air pillow.

On December the 17th I started for the interior, with baggage and provisions loaded upon six donkeys, and one Arab servant who acted as interpreter, cook, and everything else. Four musket-men sent by the Governor, accompanied me as escort, their only use being to show me the road and consume the greater part of my provisions. After a march of about 8½ miles over a gravelly soil, almost destitute of vegetation, we halted at a hut surrounded by a cluster of date-trees, called Ali Galumi. Temperature, 65° at 2 p.m.

December 18th.—Marched at 7 a.m., temperature 58°, the road passing over a low-lying tract of swampy ground, on which pools of water lay. After travelling six miles, we reached the village of Meirakum, which contained about 200 people. There was a little wheat cultivation about, and some large date-tree plantations, but the surrounding country was very desolate. After breakfast we resumed the march, and skirting the foot of a high and barren range of hills on our right, we reached the

* For map see 'Proceedings R.G.S.,' 1890, p. 648. A summary of Lieut. Vaughan's Itinerary was given by Sir F. Goldsmid in the same No. of the 'Proceedings,' October 1890, p. 577.

† For the late Colonel (afterwards Gen. Sir Lewis) Pelly's description of Linga, see 'Journal of Royal Geographical Society' for 1864, pp. 251–52. A visit to the same place is also narrated in 'Telegraph and Travel' (Macmillan, 1874), pp. 152–54.

village of Champeh about 4 p.m. The houses here, of which there were about twenty, are typical of those invariably met with in this part of the country, being small square buildings, with roofs formed of small domes, and constructed entirely of sun-dried bricks. The usual clusters of date-trees about.

19th.—March at 7.45 a.m., ascending over gently sloping ground towards the range of hills before referred to. As we near it the ground becomes strewn with immense rounded boulders of all sizes, which render our progress slow. Then on up a narrow ravine, down which flows a salt stream, whose banks are encrusted with cakes of salt, 1½ inch thick. After climbing a steep ascent we reach a watershed, elevation about 1960 feet; then winding up and down amongst hillocks, we halt at a large *hauz* by the roadside.

A hauz is a large brick cistern built in the ground and covered by a domed roof. Its supply of water is entirely dependent on the rainfall, which is caught and conveyed to it by channels from the neighbouring hills. We are now camped on the summit of the range. A mile or so to the east, Linga Peak, which is marked on the Admiralty charts and forms the highest peak of the range, rears its yellow mass against the blue sky. Vegetation, a few tamarisk bushes and occasional tufts of grass. Temperature, 58° just after sunset.

20th.—March at 8.15 a.m. Temperature 62°. After travelling for half a mile, a steep descent commences down into a valley between precipitous barren peaks. Then proceeding down the bed of a dry stream, we reach, at 3½ miles, a salt water river flowing south-west. The water, though quite undrinkable, contains numbers of small fish. Temperature, 10 a.m., 67°. The surrounding country is wild and desolate in the extreme: high mountains tower on every side. We now proceed down the stream bed, the water in which is 90 feet wide and 18 inches to 2 feet in depth, current sluggish. Crossing the river, we pass over broken ground between high hills and halt at the caravanserai of Deen, a small and filthy stone building crammed with fleas. Surrounding country, and that marched over to-day, utterly desolate; no inhabitants, no houses, and no fresh water. At 6 p.m., temperature 59°; elevation about 1400 feet.

21st.—March at 8.45 a.m.; temperature 64°. Pass a few thorn-trees, *mimosa*, and prickly bushes, as we proceed up a valley which is intersected by walls of rock, 20 to 60 feet high, and 3 or 4 feet thick, running north and south. Some of these are blue and others reddish-brown, while between them often intervene gravelly hills, whose sides they support. Then up a steep ascent in a rocky ravine, amongst tufts of Indian grass. At 5½ miles we halt on a low watershed, elevation about 1850 feet. East, south, and west, the country behind us is simply one mass of hills as far as we can see, and their general direction east and west. The road now descends gently by a winding stony track for one mile, when

it enters amongst hills and broken ground, which simply baffle all description. Down along dry watercourses, then down the steep sides of cliffs, by narrow pathways, along ravines, whose towering, rocky sides overhang the road. After three miles of this style of country, we emerge on to the banks of the salt river Maheyrun, flowing east. River bed 600 yards wide. Water 15 to 30 yards in width, 20 inches deep, and flowing slowly. The left river bank is 30 feet in height, and composed of a mass of rounded boulders of all sizes in a packing of hard sand and gravel. Crossing the river we ascend over the bank and halt at the caravanserai of Maheyrun, obtaining water from a *haus* close by.

The river is said to flow from Jamarin to Bander-i-Khamir and thence into the sea.

Latitude 27° 3′ 3″. Elevation about 1250 feet.

22*nd*.—Halt, and try a little fishing. No use, the water is too cold and they won't rise.

23*rd*.—Leave Maheyrun at 8.30 a.m. Temperature 56°. The road runs over a stony plain along the left bank of the river. At 4¾ miles I halt at the village of Kukhird, containing about 200 inhabitants. A little barley cultivation about, and plantations of pomegranates and date-trees. Water from wells, and brought down by *kanats* from the hills. The inhabitants are very polite but awfully inquisitive. They say that I am the first European who has visited the place.

24*th*.—March at 5.45 a.m., temperature 47°, over the plain, passing through cultivation and clusters of date-trees, and past the village of Harang. Away to the left the river is seen flowing along in the centre of the plain for miles. Nevertheless hills (which to the west must be about 30 miles off) encompass it on all sides. The large town of Jena is visible about five or six miles off. Proceeding up a narrow valley which leads into the hills to the north-west, we cross over a low saddle and descend on to the plain of Bastak by a winding road, perched on a rock, to one side of which is a pillar of masonry about seven feet high. I climb up to it, and looking in through a hole where one or two stones have fallen out, see the skeleton of a man inside with shrivelled dried-up flesh still adhering to it. This I afterwards learnt was the remains of a highway robber who had been bricked up alive as a punishment for his crimes. At the outskirts of the town I was met by a *tufangchi* (musket-man) of the Governor's who conducted me to Government House. As I passed through the streets the discharge of cannon reverberated through the air, amid the acclamations of the people. This was not on my account, but owing to a *khilat* having been sent to the Governor of the town by the chief Governor of the province, Fath 'Ali Khan of Lar. He was receiving the coat with due honour. To do so he rides out of the town surrounded by his soldiers, and as soon as the messengers bearing the coat appear in sight the Governor dismounts from his

horse, and advancing humbly on foot under a salute of cannon and muskets, is duly robed therein.

25th.—Am comfortably installed in the Khan's house. Muntaki Khan, the Governor, is a young man of about 25 years of age, and most civil and obliging. The people here are all Sunnis.

Bastak is a town containing a population of about four or five thousand. It is situated in the centre of a small plain about four miles in length from east to west, and three miles in breadth from north to south. This plain is enclosed by high mountains on all sides. As seen from the heights above, it presents a most picturesque appearance, being surrounded by green fields and large plantations of date-trees. Elevation about 1660 feet; latitude 27° 11′ 16″; temperature, 4 p.m., 70°, 9 p.m., 45°. It is the chief town of a district containing a population of 15,000 people, all Sunnis. There is no bazaar, the place being decidedly unsettled and subject to occasional inroads of wandering and hostile tribes. Two months ago the brother of the present Khan was murdered in the streets of the town, while on his way to the mosque to pray. The murderer was another brother, who wished to become Khan himself. The inhabitants are a fine and hardy race of mountaineers. The surrounding country is very desolate, though I think that more fertile country is to be met with along the banks of the Maheyrun to the west of Jena.

27th.—Leave Bastak and ascend up a gentle incline towards a range of hills. At six miles the road crosses over a saddle, 2450 feet, and descends down a narrow rocky valley. At about eight miles we halt at a *haus* by the roadside and breakfast. The mountains on either side are lofty, rocky, and almost destitute of vegetation. A road branches off on the left to Lar. Resuming the march, we proceed along an open plain, and cross a salt streamlet flowing east. This plain comes from the direction of Lar, and extends east towards Bandar Abbas as far as one can see. After going 14 miles we reach the hamlet of Mullá Werdi. Elevation, 1025 feet.

28th.—March at 8 a.m., temperature 54°, over the open plain towards Tuderu, which we reach in 3½ hours. A small unwalled village, with about sixty inhabitants, and subject to the inroads of Arabs, who plunder the place and carry off all the cattle. The country ahead being rather unsettled, I received here an escort of seventeen musket-men on producing the Khan's order.

30th.—Weather fine. Leave Tuderu at 9 a.m.; temperature 49°. Marching north over the gravel plain and then entering the hills, we reach a watershed forming the boundary between Lar and Bastak at 7½ miles; elevation, 1700 feet. Then on through desolate mountainous country along the banks of a salt stream, until at 11¾ miles we reach Geshun. A small clump of date-trees watered by a brackish stream, and one or two small tanks (*haus*) about. Elevation, 1450 feet.

30th.—March at 11 a.m.; temperature, 60°. After going six miles, we enter the broad gravel bed of the salt river Dundil; it rises near Hormuz, and after curving round the foot of the Kuh-i-Hormuz, it flows east. The river-bed here is half a mile in width, and very nearly dry. The Kuh-i-Hormuz, on our right, is a conical peak about 6500 feet in height. It is the western termination of a range of mountains running east for 12 or 14 miles. We then cross over the stony plain of Hormuz, and halt at the village; distance, 12 miles. A dilapidated village, containing a few huts. Latitude, 27° 31′ 36″; elevation, 1450 feet. This was evidently a much larger place in olden times, as the ruins lying around attest. The hills to the north have been mined in a very primitive fashion; they contain sulphur and large quantities of iron. Ibex, wild sheep, partridges, and sand-grouse abound. While here, news reaches us that fighting is going on between the Arabs and the Persians in Dáráb, and that consequently the country ahead is unsafe.

January 4th, 1888.—No news of any further disturbance having reached us, we leave Hormuz at 11 a.m.; temperature 64°. The plain over which we progress has a little grass growing here and there, and occasional pomegranate trees are passed. Leaving the plain, we go through the hills on the left, emerging on to another plain, and halt on the banks of a fresh-water stream to fill our mussucks (*mashk*). Some camels seen grazing ahead are a source of much speculation, my escort saying that they belong to Arabs, who cannot be very far off. Pushing on until sunset, we quit the track, and entering a secluded spot in the hills, halt for the night. A large party of Arabs pass our camp in the dark—about 500 in all. They are supposed to be part of those beaten in a recent engagement in Dáráb, and now retreating. Luckily they did not see us. We have had a sentry posted every night since leaving Tuderu, and always have a position fixed upon to retire to in case of attack. Although my escort are only villagers, they seem well up in military knowledge, and while on the march always throw out an advance guard and flankers of their own accord. The head man has a small toy telescope, which he is immensely proud of, and constantly brings into use.

5th.—March as fast as we can the greater part of the day; nevertheless we only manage to cover 15¼ miles. After ascending up a valley, we at length arrived on the summit of a range of hills; elevation, about 2250 feet. Here we halted, while I carefully scanned the country below with my glasses. In front of us lay an immense plain, destitute of vegetation, through the centre of which flowed a salt river, whose winding banks glistened a snowy white. To the west the plain stretched away towards some distant blue peaks, while to the north, towering above a mass of inferior hills, stood the snow-white peak of the Kuh-i-Sukhtak, at whose foot I knew lay the town of Forg, towards which we were travelling. Descending from the hills, we marched

rapidly across the plain, which is formed of a perfectly hard sun-baked bed of clay, and reached the river, which was full of water and flowing rapidly. Although salt, it contained numbers of small fish. By digging in the dry bed of a watercourse close by we obtained sufficient water for breakfast. We then resumed our march, ascending the river on its left bank; a vast extent of open desert ground away to the left. Leaving the river, we enter the hills, and halt in a ravine for the night. Elevation, 2100 feet.

6th.—Weather hitherto very fine, but sky to-day cloudy and overcast. A south wind is bringing up rain from the Persian Gulf. March, ascending up over the hills, cross a watershed, and descend on to a barren plain surrounded on all sides except the east by barren rocky hills, and halt at Kaleh (Bikui). A village of about 100 houses, with a large ruined fort in the centre. Elevation about 2000 feet.

After dark, just as I had sat down to dinner, the inhabitants were seized by a sudden panic, and declaring that Arabs were making a descent on the village, they rushed out and let off all their fire-arms.

7th.— Weather fine. March first over the open plain, and then through the hills by a defile between high cliffs, almost perpendicular. At 8¼ miles we emerge on to a plain which extends west as far as one can see, the range we have left rising abruptly from the plain and running along like a wall for miles. A few shrubs, grass, and prickly trees about; soil, gravel and clay; drainage, west. Then up a ravine into the hills. We next descend, and proceed up a dry watercourse between high hills. Numbers of ibex about. After going 16½ miles, we camp in the stream-bed near a spring of fresh water. Elevation, 3150 feet.

8th.—Ascend up over a range and cross a watershed. Elevation, 3750 feet, and descend towards the Fadumi or Narz plain, on which grow many date-tree plantations. The drainage of the plain is east. It extends out of sight both east and west. Crossing the plain we halt at Fadumi. Close by are the villages of Narz and Kalatu,* possessing a total population of about 1000. Elevation, 2250 feet.

The Arabi Iliyat are encamped about in the neighbourhood, and are said to be a most dangerous lot. Their hot-weather quarters are in the hills of Baonat, north-east of Shiraz.

10th.—After 20 hours' incessant rain, which I was supposed by the inhabitants to have brought with me, I left the village, and after going 3½ miles, skirting the Shur river, flowing south-east, we reached a ford, and succeeded in crossing its swollen waters with some

* The names Kaleh Bikui and Fadumi (Pedumi) are in the Chev. Lapie's map (1819) attached to Dupré's 'Voyage en Perse,' and Kalatu is in Preece's 'Route Survey' (see R.G.S. 'Supplementary Papers,' vol. i., 1882-85); but there is no mention in either of the snow-peaked Kuh-i-Sukhtâk, "at whose foot lay the town of Forg," nor of Narz plain or village. It may here be stated that Lieut. Vaughan's original spelling is, for the most part, retained.

difficulty; the water was salt, intensely cold, and flowing rapidly. After going half a mile up its banks we reached the point where the fresh-water river of Forg joins it, coming down through a narrow valley, up which we proceeded between barren rocky hills. The river is almost hidden by long rushes, which shelter the wild boar and other game. After travelling eight miles we emerged on to the Forg Plain, covered with cultivation, and studded with hamlets, and at 10½ miles entered the town of Forg, a walled town in a very dilapidated condition, containing about 150 people. The total population of the plain does not exceed 500. The town is governed by a Naib, a nephew of the Khan of Lar. Corn, barley, and opium are grown. The Forg river rises close by about one mile to the west, and does not extend to the north of it, as shown in many maps.

There are some fine ruins in the neighbourhood. One called Kaleh Bahman,* an ancient fortress perched on the top of a low detached ridge. On the side from which we approached it, the ground rose gently towards the summit, and was enclosed by several lines of masonry walls flanked by round towers, all, however, in the most ruinous condition. Near the summit was a cavern, in the centre of which was an immense well, sunk through the solid rock, whence the garrison used to draw their supply of water, the well being filled from a subterranean channel conducting a stream to it from outside. The walls in many places were 15 feet thick. On the farther side, the ridge terminated abruptly in a precipice of 80 or 100 feet. These ruins, and the remains of extensive aqueducts, show what a prosperous place Forg must have been in ancient days. To the west are other ruins.

Deer, wild duck, bustard, sand-grouse, hares, and partridges abound.

Latitude, 28° 15′ 44″ (28° 18′ 2″). Elevation about 2890 feet. Variation of the compass, 1° 53′ east.

Excessively cold weather having now set in, and all my thermometers being broken, I decided to wait until the climate got milder, and fresh instruments were procured from Shiraz. The time passed pleasantly enough in shooting and making excursions into the surrounding country with the Naib. He invited me to accompany him on an expedition, tax collecting, which however I declined, as I had done enough travelling for the present, having come thus far, 190 miles, on foot. I now bought a horse, and took a *dervish* into my service as groom, which I had reason not long after to regret. He was rather amusing at first, as he used to sing and act the part of a dervish when asking alms and giving his blessing, &c.; but one got tired of this.

* So-called in D'Anville. Dupré, who visited the place in 1808, says that the castle was built by King Baharam. He adds that 'Abdullah Khan, Governor of Laristan in the writer's time, when revolting against Agha Muhammad Khan, had shut himself up there, and that the eunuch-monarch, after securing his submission, had destroyed the stronghold almost entirely.

February 5th.—Leave Forg during heavy rain, and enter a ravine in the hills, down which pours a torrent of fresh water, which supplies the town, the remainder losing itself on the plain below. The whole of the march is up amongst rocks and cliffs; after going some miles we pass Chashma-i-Ali, a place of pilgrimage, and after struggling up a steep and dangerous ascent, pass along a narrow ledge of rock, with a perpendicular cliff on the left, and a torrent roaring in its rocky bed 200 feet below on the right. Then over a watershed, elevation 4320 feet, and down to an encampment of nomads in a valley on the farther side. Elevation, 4230 feet.

6th.—Leave camp and march amongst hills, and after going six miles cross a watershed, elevation 5385 feet. Looking back from here a splendid view of the high peaks of the Forg range is obtainable. All the higher ones are covered with a heavy fall of snow, the lowest point of which is, I should say, about 16 feet above us. Descending from the range we march over a plateau, and after going 14 miles, halt at the camp of Rosak.

There are about a hundred tents here belonging to nomad Persians, who possess large flocks of sheep and goats. The people are dirty and rough, yet civil. Elevation, 5458 feet.

We are now in rear of the Forg range, which apparently connects with the Darab range of hills, as nothing but numberless peaks are visible south-west, west, and north-west; the number of them is quite perplexing, and it is impossible to do more than generalise them.

7th.—March over the open plain draining south-east, with an exit probably round the east extremity of the Forg range. The ground, though stony, affords moderate grazing. At six miles we pass a small hamlet, called Chah Kunder, with a pond in front of it. Then ascend over a low spur-like range, thrown out from the Kúh-i-sang-i-átash (elevation, 5458 feet), and descend on to a sandy plain bounded on the right by a high range of hills. After travelling 13 miles, passing various nomad camps, we turn to the left, and passing a curious-looking rock standing up by itself, we halt at the encampment of Guloo Kuh. This is a cold-weather camping ground of Persian Iliyats, and the head-quarters of a tribe. Their head man is Ameer Kuli Khan. Elevation, 5500 feet.

The people are a rough lot, and very different in their manners from the more refined men of the upper class met with in cities. One of their tents, near that of the Khan, whose guest I was during my stay, was assigned to me on arrival. They possess immense herds of sheep and goats, and during the cold weather they encamp on the plains in the vicinity of wells and springs. When the grass in the neighbourhood becomes exhausted, they strike camp and move to another spot. In the heat of summer they reside in the hills and think nothing of moving several hundred miles from summer to winter quarters. Each tribe has certain

recognised grazing grounds, and it is regarding these that most of their disputes arise. The women go about unveiled, and are allowed far more freedom than those who dwell in cities. In this respect, however, the customs of tribes vary.

Some of them will receive a traveller in the most friendly manner, while others (some of the worst of the marauding Arabs) will murder him on the first opportunity that may present itself. The tribes of Fars which bear the worst repute in this respect, are the Bhalus and the Arabi Iliyat. I noticed that when we passed a camp of the latter, though in broad daylight and within sight of a town, my escort were very anxious to pass them as rapidly as possible. I believe one reason why they are so untrustworthy is, that owing to their wandering mode of existence, it is very hard to prove anything against them, as they may be in a place one day and miles away the next. A great part of the population of Persia is nomad. Their herds supply most of their wants; it is from the goats' hair that their black tents are woven and their ropes are twisted; their overcoats, caps, and carpets are made from the wool of their sheep, while their saddles, gaiters, accoutrements, and often shoes, are made from their skins.

They always seemed most devoted to their chiefs, whose power over them is almost absolute, and though respectful in salutation and other outward forms, even the raggedest and dirtiest of them would talk to a Khan with great freedom.

9th.—Leave Gulu Kuh, skirting the hills on the left. After going about two miles we pass through a few trees and shrubs. An ascent then commences up a watercourse at the foot of the Kúh-i-sang-i-átash, a high mountain on the left. The elevation on the saddle we reach is about 6360 feet, and the snow which covers the "mountain of flint stone," on our left lies in patches over the track, and though warmly wrapped up one cannot help shivering. It is such a contrast to Calcutta. According to existing maps, the range I am now crossing extends for many miles to the east. I should say they probably terminate about 15 miles north-east of this, and any prolongation of them branches off from that point in a south-east direction.

Descending from the pass we travel over an ever widening valley full of almond and other trees, averaging 15 feet in height. There is also a considerable amount of grass about. To the west the hills of Darab rise tier above tier, culminating in a very high snow range. Proceeding we emerge on to a great level sandy plain which extends from here to Katru, and thence, sweeping round in a curve to the north-east, almost reaches Beshna. After going 22¼ miles, we halt at the fort of Tul Halal, out on the open plain.

During this march I allowed my baggage to start some hours before me, and on coming up with it found that the *dervish* had decamped, taking with him a gun and most of my money, which had been packed

in my boxes. Of course, the muleteer and the two *tufangchis* knew nothing about it; no, not they. All they saw was, the dervish lagging behind on one of the mules, and after going a little further the mule overtook them, minus the dervish.

The result was that, instead of going on to Beshna direct, I was compelled to go into Niris to complain to the Khan of that place and obtain redress.

The fort here is the residence of another Khan, the tents of whose tribe are dotted round the plain at the foot of the hills. The plain is bounded north-east and east by a range about 20 miles off, and parallel to the Kuh-i-Kibla range. To the south-east there is an opening a few miles in width where open ground extends out of sight. Elevation, about 5300 feet.

12th and *13th*.—March for two days along the foot of the snow-peaked rocky Kibla range. On the 12th we halt for the night at Wareera, a small hamlet. Elevation, about 5350 feet.

Away to the right lies an extensive swamp, which receives the drainage from the surrounding hills, and round which grow dense and tall rushes. The wild ass abounds on the plain of Katru (as I have called it), also hares and sand-grouse.

On the 13th we reached Katru, a dilapidated town, situated at an elevation of about 5350 feet.

From Katru we passed over a very high range of hills and halted for one night on their summit, and the next morning reached Niris.

Niris is the chief town of a district of the same name, and is situated within a few miles of the Dariya-i-Niris. The people there told me that the lake was not navigated, there being no boats.*

Niris contains a population of several thousand people and possesses numerous caravanserais; but, as it has frequently been visited by previous travellers, it is unnecessary to say more about it.

Leaving the city, we recrossed the same range by another road and marched to Beshna, reaching it in two days.

Beshna is a village situated between some low hills among which the inhabitants graze their flocks.

20th.—Leave Beshna and march to Robat, which we reached after three marches, on the 23rd. On the first day we halted at Chah Kabu, elevation about 5350 feet; and on the second day at Chah Nain, elevation about the same. The road was over ground which rose and fell in gentle undulations, each of several miles in extent, there being no hills here at all to speak of, yet the maps show a decided range running from north-west to south-east. To the east the country was an open plain of vast

* Captain Wells has described the lake in some detail in the 'Proceedings of the Royal Geographical Society' for March 1883. Captain (afterwards Colonel Sir Oliver) St. John's reception at Niris is narrated in 'Eastern Persia,' vol. i. p. 107-8 (Macmillan, 1876).

extent, reaching up to the Kuh Parhiz and the great range which runs from Yezd to Kerman, and at the foot of which lay a vast expanse of low-lying sandy ground with an occasional swamp here and there. To the west the country was stony and undulating, with low hills cropping up occasionally.

After leaving Chah Nain we struggled across a sandy plain, swampy in places, until we reached Robat.

Robat is a ruinous village, containing perhaps 150 people. Elevation about 5200 feet.

23*rd*.—March over the open plain which is here gravelly and covered with shrubs, amongst which herds of antelope are seen, and ascending up a gentle glacis-like slope halt at a hamlet called Charbagh, at the foot of some high and rocky hills. Elevation, about 6700 feet.

We reached the hamlet just before dusk, and knowing the place to be uninhabited, were much surprised to see fires burning and a party of men sitting round them, who got up and fled on our approach, and in such haste as to leave part of their clothing and a sheep just cut up and already for cooking, behind them.

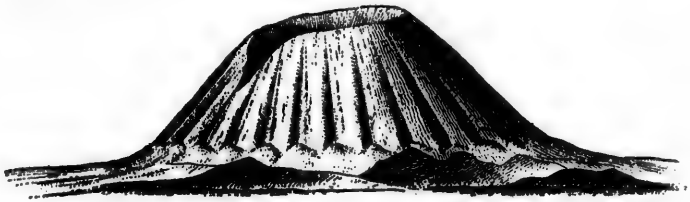
We naturally concluded that they were robbers. However, we dined off the sheep, and securing our baggage animals inside a hut, retired to another one for the night, the whole of our party taking their turn at sentry-go for two hours each until dawn, when we loaded up and marched off unmolested. My rifle having been exchanged for a horse, and the groom having decamped with a gun, our only weapons were two revolvers, which would not have been of much use against guns.

24*th*.—Marched over stony ground along the foot of the hills, the great plain of Robat on the left which extends up to and beyond Yezd, being bounded west by the hills of Baonat just visible. The plain is practically desert, the only town of any importance on it being Herat-i-Kharah. The highest elevation reached on the march was 7510 feet, while the Kuh-i-Ayub group of peaks towered above us on the right, their summits covered with snow; then, descending into a valley, we halted at Khavre, a village of about 70 houses, situated in a valley, at an elevation of about 7510 feet. Latitude 30° 35′ 8″ (30° 36′ 34″).

25*th*.—Leave Khavre and ascend over a watershed between low hills. Elevation 8000 feet. Then down the northern slope of the Spur we have crossed, to Merao, a wretched looking hamlet which is constantly being looted by robbers, who have carried off almost everything the people possessed.

26*th*.—March; descending gently from the hills on to a great plain which, sloping away from the range to the east, drains west, we pass two curious looking hills on the right, the Kuh-i-Aag (or Arg). Both are evidently extinct volcanoes, and are known by the natives as "Bala," and "Paien," Upper and Lower. My muleteer said they were both made

by a giant shaking the dust out of his shoes, and that if I didn't believe him, I need only go there, when I would see that they were formed of nothing but soft soil which gave under one's feet. The craters of both are plainly visible, while their sides are furrowed with the greatest regularity, thus:—



After marching 20¼ miles we halt in the desert at the foot of a low hill, about 300 feet above the plain, called the Kuh Dukaru. We expected to have found water here, but there was none.

28*th.*—March early over a desert plain as yesterday, and at about 21 miles cross a low watershed, elevation about 6360 feet. The range is called the Sar-i-Kuh. We then descend gently over open ground to Kalweh, which is reached at 31¼ miles, or after going 51½ miles without watering. The animals were very thirsty after this, as may be imagined.

Kalweh is a small fort, containing one solitary inhabitant. At the last watershed we crossed the great range south of Yezd, which, commencing at the Shir Kuh near Taft, runs south-east through Sardu towards Bampur.

29*th.*—Halt.

March 1*st.*—Leave Kalweh and march to a garden called Hussainabad, elevation about 5100 feet, passing the Kuh I Girdah and Kuh I Mardwar, high rocky mountains on the left which rise abruptly from the plain.

2*nd.*—Leave Hussainabad and at 6¾ miles pass through the outskirts of Merir, a considerable and prosperous looking town with plenty of cultivation around. Then on over the plain, passing the town of Sar-i-Yezd about 4½ miles off to the right. Skirt a spur of the Shir Kuh and descend gently towards Muhammadabad, which we reach at dusk. A large and prosperous town.

3*rd.*—Arrive at Yezd. (Elevation about 3800 feet.) Thus completing a journey of 418 miles from the Persian Gulf.

This city is already well known. It is one of the ancient cities of Persia, and derives its name from Yezdegerd, one of the old Sassanian kings who reigned over the Zoroastrians, who are still more numerous in this city than in any other part of Persia. According to the census taken in 1889 they numbered 6737. It is a fine city, containing a population of between 60,000 and 70,000 souls, and is the chief town of

the district of the same name.* The Jews number about 900. There are several fire temples in the place, though mostly concealed from view. A curious feature here is the great number of wind towers; these are high square erections, rather top heavy, and resembling an old-fashioned kitchen clock with the face knocked out, through which the wind pours down into the lower rooms of the houses, and keeps them cool during the summer months, when the heat is so great that many of the people live altogether in subterranean apartments. Others who can afford to leave their business, retire to their summer houses on the Shir Kuh and there pass the summer. The bazaars, which are roofed in, are very extensive and well stocked. There is a very fine old mosque, called the "Juma Masjid" in the city, whose lofty minarets are visible for many a mile across the dreary expanse by which the place is surrounded.

Water is brought by numerous underground passages, along which it flows from the Shir Kuh, at a depth of many feet below the surface.

* Among the more recent accounts of Yezd may be mentioned that of the late Sir Charles Macgregor and the officers of the Sistan Mission. My own first impressions of the place are recorded in 'Telegraph and Travel,' pp. 569–74. Lieut. Vaughan's estimate of the population is in excess of generally received numbers. 'The Statesman's Year-book' has 40,000, a total corresponding with that which I roughly put down in 1865, allowing an eighth of these figures for Parsis and Non-Muhammadans. It may be interesting to note what an intelligent but little-known French traveller says on the subject more than eighty years ago. M. Dupré, who arrived at Yezd in the spring of 1808, is informed that the city has a population of 35,000, of which 4000 (the number given two years afterwards by Christie) are Gabrs or Parsis; but he is disposed to reduce the number by a third, thus estimating the whole of the inhabitants at less than 24,000, of which the Parsi section would be about 2700. If, according to the (presumably latest) census referred to by Lieut. Vaughan, the Parsis of Yezd numbered 6737 souls, I think that in it must have been included the Gabrs of the outside villages. These M. Dupré reckoned at about 8000, to which, if the 2700 be added, we obtain a total of 10,700. Now it seems quite reasonable to suppose, from a study of local history (especially in later years) that the numbers have been reduced during the passing century, owing to emigration, famines, and other causes, by at least 4000, and that the balance of 6700 would adequately represent the present numerical strength of the Yezd Parsis, of whom one-third might be considered to inhabit the city, and two-thirds the outlying villages. Of these last M. Dupré gives a list of fifteen, one of them situated at a distance of as much as seventy miles from the provincial capital, but none to be identified with the Kalanta or Chah-i-kuh Heriz of Lieut. Vaughan. Of the town itself the French traveller writes:—"Les seuls objets remarquables à Yezd, sont quatre édifices où se tiennent les écoles, et une grande mosquée ornée de quatre minarets et d'autant de coupoles vernissées. Les autres mosquées, au nombre de vingt, sont d'une construction commune. Il y a vingt-quatre caravansérails. . . . Les rues sont sales, étroites, pleines de poussière en été, et de boue en hiver. La ville contient trente-trois citernes, la citadelle six; toutes sont profondes, et l'on y descend par plusieurs marches. . . . . On compte à Yezd trente-quatre boutiques d'armuriers. Vingt-une sont destinées à manufacturer des fusils presque tous à mèche, et des pistolets. Treize sont consacrées à la fabrique des sabres et des *khandjárs* (poignards). . . . Des fabriques prennent ici le nom de raffinerie de sucre." I can bear personal testimony to the exceptional character of the great mosque or Juma Masjid, here specified; but, while admitting the many defects, architectural and municipal, of the streets and buildings, I cannot withhold the fact that the former were comparatively clean. There was, moreover, a new bazaar in Yezd, handsome enough in its way.

As regards trade, the place does a considerable amount; exporting opium, cotton and wool, &c. The imports consist of almost every kind of goods consumed in Persia, amongst which are large quantities of sugar and tea. A great portion of this trade is in the hands of the Parsis.

The port of Yezd is, of course, Bandar Abbas, Linga port supplying but little owing to the badness of the roads, and their insecurity where passing through the nomad haunts of Lar.

30*th*.—Temperature, 54°. Weather fine. Leave Yezd and travel over a sandy plain encumbered by heaps of loose sand, driven here before the northerly winds, and piled up against the walls of the villages *en route* till level with their tops. After travelling about 11 miles, we halt at the large village of Hussainabad. Elevation, about 3420 feet.

31*st*.—Weather fair. Leave Hussainabad and cross over a sandy undulating plain, bounded by a rocky barren range of hills on the right, at whose foot lies a perfectly level sandy stretch of ground covered here and there with salt incrustation. At 10½ miles we reach the village of Kalanta, a Parsi village, containing 50 or 60 houses, with a fire temple. The whole place is very neat and clean, and the inhabitants, who like all other Parsis are compelled to wear dust-coloured clothes, are very civil and obliging. Elevation, about 3320 feet. At this place I purchase sufficient provisions to carry me on to Anarak.

April 1*st*.—Weather fine. Temperature, 50° at 7 a.m. Leave Kalanta, and march over ground the same as in yesterday's route, and after going 14 miles halt at Chah-i-Heriz.

This is a Parsi place of pilgrimage, containing a shrine, erected in memory of a Parsi virgin, who being pursued by several Muhammedans with intent to violate her chastity, prayed that she might sink and disappear into the ground. This immediately occurred on the spot where the shrine now stands. There are a few huts for pilgrims close by.

2*nd*.—Temperature, 50°. Weather fine. March at 8 a.m. and crossing a low range of hills descend on to a plain, covered with scanty vegetation, on which a few flocks of sheep and goats are seen grazing. A march of 8¾ miles brings us to the Hauz-i-Giaour, a water-tank with a small caravanserai close by. Then on between two low ranges of hills, leaving which we emerge on to an open plain, which, though stony, is covered with shrubs and tufts of grass. On our left a *kavir* is visible, stretching away for many miles to the west. After crossing a narrow neck of it, we halt in the desert, having done 18¾ miles. Elevation, about 2950 feet.

3*rd*.—Temperature, 57°. Weather fine. March at 11 a.m., and after going 12¾ miles over very rough ground arrive at Toot.

Toot is a picturesque village, containing a few houses and an old caravanserai. There is also a little cultivation about, which forms a

pleasant contrast to the desolate country around. Elevation, about 3140 feet.

4th.—Temperature, 58°. Leave Toot at 9 a.m. Sky slightly overcast. Pass over nearly the same ground as yesterday and halt at 14¾ miles in a ravine which drains the low and sandy hills on our right into the *kavir*.

5th.—Temperature, 50°. Weather fine. Leave camp at 8 a.m., and pass over a desolate sandy waste descending until we almost touch the *kavir*, then ascending again we pass through broken hillocks, and travelling up the dry bed of a watercourse emerge on to open ground at the foot of the Siah Kuh, a mountain of considerable elevation (though not snow capped) and evidently of volcanic origin. After going 20¾ miles we reach a spring hidden away in a ravine amongst the hills, and called Chah-i-Kuh-Heriz.

6th.—Weather fine. Cross over a low watershed and march alongside of a barren range on the left, round a spur of which the road turns sharply to the left, and at 22½ miles halt at Chah Gumbuz. Elevation, about 4040 feet. The country passed over to-day is desolate, as usual, and the broken low lying country on the right is unusually so even for Persia. There is a small well here which is said to be haunted by *shaitans*, evil spirits, and several people coming to draw water are said to have fallen dead at its edge.

7th.—Temperature, 65°. Sky overcast. Leave camp at 9 a.m., skirting the hills on the left. We then ascend gently over a range of desolate hills, the watershed of which has an elevation of about 4850 feet. Then descending we cross over an open sandy plain extending as far as Nain to the left, and bounded on the right by a low chain of hills at a few miles distance. We now ascend towards another and higher range of hills. At this time a small black cloud was visible away to the west, and by the time we reached the highest point on the road, the sky in that direction was completely shrouded over with a dense black mass of clouds advancing toward us with great rapidity, and from which came every now and then brilliant flashes of lightning accompanied by a continuous roll of thunder ever growing louder. Then came a cold wind, raising clouds of dust, next a few heavy drops of rain, and the storm burst upon us with terrific fury. Rain and hail came beating down, and the wind blew with such force that it was impossible to proceed any longer on our journey. The animals refused to face it, and huddled together in a helpless mass, while we dismounted and covering our saddles up sought shelter among them. After about 20 minutes the violence of the storm abated, when drenched to the skin we hurried along over the muddy ground as fast as the animals would go, for our provisions being consumed we were afraid of being cut off from Anarak, now near at hand, by the mountain streams in whose beds the road in many places ran. As the atmosphere cleared, we saw the water racing

in torrents down the precipitous sides of the rocky peaks between which we were passing, while every now and then, with a dull roar, immense masses of earth and stones came sliding and leaping down them. Descending from the hills along a stream bed, luckily not yet in flood, we emerged on to open ground, and travelling across it for a few miles arrived at the caravanserai outside the city just as it was growing dark. There, in the rooms, we lit big fires, and began to dry our clothes and investigate the damage.

The people of Anarak were not over polite; in fact, they turned out in large numbers and mobbed both me and my servant, compelling us under a shower of brickbats to leave the city, which we had entered, and seek a refuge in the caravanserai. The Persian travellers who were stopping there came out in a body to assist us, and thus put an end to an affair which at one time threatened a disastrous termination to my journey.

Anarak is a town or small city, containing about 4000 inhabitants. It is compactly built, being surrounded by low walls. Close by is the Kuh Daramgill, the highest peak of a lofty range of hills to the north. A sandy desert plain stretches from here to Nain.

The inhabitants are chiefly miners, who work the mines in the neighbourhood, of which there are many, both of lead and copper. There are also a large number of camels owned by the people. The city is governed by a Naib. Elevation, 4700 feet.

9th.—Weather fine, and temperature 64° at mid-day. Leave Anarak, cross over the hills to the north of it by the Gudar-i-Zargarabád, whose elevation is about 5000 feet, and descend on to a plain to the north, and halt at the hamlet of Shurab. This hamlet marks the farthest limit attained by former Turkoman raiders, the place possessing a tower, built to afford protection against such inroads. Elevation, 4200 feet.

10th.—Leave Chah Shurab; sky overcast; and march to Chashma-i-Ashin. The country to the north falls for about 12 miles, and then runs on in a series of undulating sandy ridges interspersed with low bushes, which disappear from view on the horizon. The drainage is north-east. About 10 or 12 miles to the east is a high and lofty range called the Kuh Mahalla, the hills of which are very precipitous, barren, and rocky; from Shurab they looked simply magnificent, running away north-east by east into the desert. Miles away to the north-east loomed through the distance some lofty dark blue hills, which I was told were the hills of Jandak. Ashin is simply a small village of about fifteen houses. Elevation about 4700 feet.

To the north of Ashin are some low hills, beyond which lies the village of Baba Khalet, distant 12 miles from Ashin, and inhabited by charcoal burners; from Baba Khalet to Biabanak, near Samnan, the country is waterless and uninhabited. There is said to be a forest north

of Baba Khalet, four miles in depth from north to south, and extending for many miles to the north-east. On its northern border lies the KAVIR.

12th and 13th.—March from Chashma-i-Ashin to Chashma Gauhir, 36½ miles. *No water en route.* Country undulating, and draining south into a salt swamp situated at some distance on an extensive plain bounded by a distant range of reddish hills. Gauhir is a cluster of springs of brackish water at the foot of the Kuh-i-Dom range, at an elevation of 4400 feet. Latitude 33° 49′ 36″.

14th.—Leave Gauhir at 10.30 a.m. Temperature 63°. Enter the hills to the north, and after crossing a watershed whose elevation is 4700 feet, descend gently down a watercourse running north-east into the basin of the Dasht-i-Kavir. As we quitted the defile, a sudden turn in the road presented to our astonished gaze what at first sight looked like a vast frozen sea stretching away to the right as far as the eye could reach in one vast glistening expanse. A more careful examination proved it to be nothing more than salt formed into one immense sheet of dazzling brilliancy, while here and there upon its surface pools of water, showing up in the most intense blue, were visible. Away to the north of it stood a distant range of low red hills.

A peculiar haze, perhaps caused by evaporation, hangs over the whole scene, which though softening the features of the distant hills, does not obliterate their details. This which I now see before me is the Great Salt Swamp, to the presence of which the Dasht-i-Kavir owes its name. This swamp, lying at a low level in the centre of the great desert, receives into its bed the drainage from an immense tract of territory. All the rivers flowing into it are more or less salt, and carry down to it annually a great volume of water. The fierce heat of the desert during the summer months causes a rapid evaporation, the result being that the salt constantly increases in proportion to the water, until at last the ground becomes caked with it. The Persians say that many years ago a sea rolled its waves over the whole of the depression where I am now travelling, and that it was navigated by ships which used to sail from Samnan to Kashan. My guide told me the following legend:—"One day, many years ago, long before the time of the Prophet, a holy man arrived at Kashan, took a boat, and ordered the man to sail him across to some point or other; the boatman being of a suspicious turn of mind, insisted on his paying his fare before landing. This he did; but the boatman objected, saying that the fare was not enough, and that he wanted something extra for his trouble. After a dispute he got this, and the old man said nothing more until he reached the shore; then, taking up a handful of earth from the ground, he threw it into the sea, uttering these words: 'Avaricious boatmen here shall ply their trade no more.' The sea instantly disappeared, and in its place came the desert as it now stands, while the fish became turned into stones, the boatman

who tried to swindle was struck with blindness, and the holy man went on his way rejoicing."

I suggested to my guide that this was rather a severe punishment for such a small fault, and that an earthquake or a severe storm which would have sent all the boatmen to the bottom of the sea might have been sufficient to meet the requirements of the case. He said, he didn't know about that; anyhow this was the story as he had heard it recounted by his tribe, who had lived on the borders of the desert for ages.

After breakfasting in sight of this wonderful marsh, which was several miles off, I climbed to the top of the nearest hill to see if I could mark its limits. But no; there it was, stretching away without any termination, until it and the sky appeared to meet.

Resuming the march we reached Chashma Bulazoon, a small spring of fresh water, and halted there for the night. Elevation 4200 feet. Here we saw the tracks of a large panther, so lighting several fires we brought the baggage animals inside them and lay down ourselves close by.

The next few marches were in the neighbourhood of the swamp, towards the centre of which the wind blew unceasingly day and night. On the second evening, at Chah Shur (elevation 3700 feet), it blew a perfect gale, so much so that all our fires were blown away, and it became almost impossible to cook anything. Then, to add to the general discomfort, the rain began to descend in torrents, and we had to shift from the stream bed in which we had camped for shelter, on to higher ground. I lay during the night with a waterproof sheet over me and my boxes and saddle piled upon the windy side. Needless to say that I always slept in my clothes and boots.

16*th*.—Weather fine. Descend gently for 12 miles over a vast glacis-like slope of open ground. Soil, gravel and sand, covered with low bushes of tamarisk and tufts of bunch grass, until we reach the Kavir, across a small neck of which we pass. Elevation about 2700 feet. Then ascend gently, and halt on the open plain.

17*th*.—Broke my remaining thermometer.

March at sunrise and reach Chashma Tulha, situated at the foot of the Kuh-i-Tulha, at an elevation of about 3340 feet. The summit of the mountain is about 800 feet higher. From this point Kavir is visible to the east as far as one can see. Atmosphere hazy.

Wild sheep, ibex, panther, sandgrouse, and hares abound in these hills. A few Arabs from the neighbourhood of Teheran bring camels here to graze, and water them at the spring. Vegetation scanty.

18*th*.—March through the hills, descending gently, and emerging on to fairly open ground, travel over it till sunset, when the road being lost we bivouac where we are for the night amongst a waste of sand-hills.

19*th*.—Reach Chashma-i-chahi Mishmís, and after refilling our

mussucks (water bags) reach the edge of the Kavir and halt. Elevation, 2600 feet.

Away to the west stretches a vast sandy plain on which the Siah Kuh rears its immense mass. This mountain is not part of a chain. It is a solitary hill, probably an extinct volcano, with a flattened summit, while between it and the Kuh-i-Gugird (of which it is shown as a part in all the present maps), an extensive salt marsh intervenes. To the north lie the Kuh-i-Gach and Kuh-i-Gugird,* while away to the east, innumerable hills of shifting sand conceal their prolongation and the Dasht-i-Kavir from sight.

20th.—March across the kavir, which consists here of a swollen puffed-up glazed crust with a powdery soil beneath it. Colour, Naples yellow. As we progress the animals feet break through its surface with a crack-sound; all vegetation ceases. At the fourth mile we reach a salt stream (called by the natives, the Shŭt), flowing from west to east at 1½ miles an hour. Water intensely salt. This river probably drains the low kavir north of the Siah Kuh into the Great Kavir, and also receives the drainage from the hills north of Samnan. In flood it must be about 150 yards in breadth, with an average depth of six feet, though at present the section of the actual stream flowing is not more than eight square feet. A few white birds are visible here and there, which resemble the *bagla* (*bagula*) or Indian paddy bird, also a few ravens. After crossing the stream with great difficulty, owing to the swampy nature of its banks, we resume our march over the kavir. The elevation is between 1400 and 2400 feet. Skirting a low spur of the Kuh-i-Gugird, we proceed up a desolate valley formed of soft and slippery uneven kavir, studded with large rounded holes, rendering our progress slow and laborious; we then cross the same river once more; its banks here are covered with a deposit of salt about six inches thick, extending for many yards on either bank.

The surrounding scenery is appallingly desolate; on the right rise the barren waterless hills of the Kuh-i-Gugird or sulphur range. These hills are formed of a succession of sandy hillocks rising tier above tier; in places they consist of soft rock, with fine parallel strata running in a horizontal direction, and resembling a section of a well pressed haystack. Here and there narrow perpendicular strata of gypsum intervene. The ravines in these hills have often perpendicular sides rising to a height of 200 or 300 feet, while their width does not exceed 20 or 30 feet. At other places the ravines turn into large tunnels, which, twisting about under ground for 100 yards or more, emerge again on another ravine higher up. Bushes grow here and there, but there is not a trace of fresh water to be found.

Naphtha is said to be found in them, and the inhabitants of Samnan occasionally mine them for copper and for sulphur. While thus engaged

* *Gatch* is the white earth of which lime is formed, or plaster. *Gugird* is sulphur.

they live on water which they obtain from the salt streams and condense with a still. In this valley we halt for the night.

21*st*.—After going some miles we cross over a low hill called the Kuh-i-Gach, on which stands a ruined pillar, called the Mil Ispahâni. On the place where the pillar now stands, a wealthy camel owner, an inhabitant of Ispahan, was overtaken by heavy rain, and was unable either to advance or retire owing to the kavir on both sides having become a dangerous swamp. He therefore had to remain where he was until the ground became sufficiently hard for him to travel on again. This did not occur until 25 of his camels had died either from starvation or attempting to cross. In memory of the event and as a warning to future travellers, he erected this pillar. As we passed along the road we passed the bones of camels lying by the track; while the remains of fires and other debris close by showed that their owners had remained with them for many days. Then on through a swamp with water lying on it several inches in depth, and over dry ground caked with salt, and covered with a profusion of tamarisk bushes, until we reach Chah Jangi, a small well hidden amongst bushes. Elevation about 2880 feet.

22*nd*.—March to Biabanak, ascending gently almost the whole way. Drainage south.

At Biabanak the inhabitants come crowding round to learn where I have come from, and are much astonished to hear that I have crossed the desert from Anarak.

23*rd*.—Arrive at Samnan, after travelling over a sandy plain, with villages and cultivation here and there. The only village I passed through *en route* was Hajiabad, four miles from Biabanak.

Samnan is a city well known, since it lies on the main road between Meshed and Teheran. It contains about 16,000 inhabitants, amongst whom are no Jews, this being one of the cities in which they are not permitted to reside.*

My journey from Yezd to Samnan occupied me 24 days, during

* Fraser ('Narrative of a Journey into Khorasan') gives a deplorable account of Samnan at the time of his visit in the last days of 1821. "We found ourselves," he writes, "riding through a long maze of utter ruins, abandoned suburbs, and crumbling garden walls, over an execrable road: these hide the city from the traveller until he reaches its gate, through which he enters a wretched bazaar that extends for one hundred yards, very partially occupied by shops." He adds: "The inhabitants could not be stated at more than three or four thousand souls, and these consist almost entirely of husbandmen who cultivate the fields and gardens in the vicinity, and of the tradesmen who supply their most urgent wants." When visited half a century later by the Sistan Mission, its walls and citadel were found to be in a dilapidated condition, but it was reputed to possess twelve caravanserais, four colleges, excellent bazaars, with seven hundred shops, four hummams, and three mosques. Of the last, one is reported to be of great antiquity: it is the same as mentioned by Fraser, who is doubtful, from the inscription which it bears, whether it was built or repaired by Shah Rukh, son of Timúr. The inhabitants of Samnan were reckoned in 1872 at 2500 families, or from 10,000 to 13,000 souls.

which I covered 370 miles of country, and only provisioned twice, once at Kalanta and once at Anarak. I carried eight *mussucks* with me, which were filled with water when necessary. My caravan consisted of two horses, seven mules, and two donkeys, two muleteers, one personal servant, one groom, and one guide. From Samnan I made an excursion into the desert to the Gugird hills, in the hope of being able to ascend them and survey the country south and south-east of them. After getting within 12 miles of the range, the further progress of my camels was checked by swampy ground; so I proceeded the remainder of the road on foot, carrying water and food with me. After ascending about two-thirds of the way up the hills I was taken sick and compelled to return. I found at the north foot of the range a thicket consisting of bushes of every description, varying from three to 14 feet in height and extending west for miles, probably east also, though this latter I was unable to ascertain. On the upper parts of the hills grew occasional tufts of grass, on which the wild sheep and other game, whose footmarks were plentiful, fed. In one of the ravines I saw two very curious birds' nests, exactly opposite to each other, and built out from the cliffs; they were about 40 feet above my head, and were built of sticks woven like a hamper, their shape was cylindrical, and their estimated dimensions 2½ feet by 1 foot. The only birds visible were some large ones soaring at a great height overhead.

May 28th.—Leave Samnan for Bajistan; weather fine; temperature 79° at 8 a.m.; taking five camels for baggage and water. After going 6½ miles I halt at the hamlet of Kalat.

30th.—Leave Kalat at 4 a.m., and after going 14½ miles through mountains, halt at Chashma Bulandab. Elevation about 5250 feet. Bulandab is a grassy plateau surrounded N.N.E. and north-west by high hills.

31st.—Weather fine. March at 4 a.m. After descending, gently ascend and cross over a range of hills, whose elevation is about 5200 feet and descend to the village of Durai, which contains about twenty houses. The country round possesses good grazing.

June 1st.—Leave Durai and march to Chah Husaini, a distance of 15¼ miles. The road runs through mountainous country covered with bushes, shrubs, and grass, though water is scarce. At 9¼ miles a descent commences past the foot of Kuh-i-Chah Shah on the left, and the Kuh-i-Afghan on the right. This descent continues till Chah Hussaini is reached.

Latitude 35° 39′ 16″. Elevation about 5200 feet. A plain ahead of us extends from Damaghan to the Kuh-i-Chashma o Chah Shereen, and drains into the Dasht-i-Kavir by a broad and shallow watercourse, now dry.

4th.—Weather fine; march at 4 a.m. to the small fort of Jawanabad, where I halt for the night; surrounding country very desolate. Elevation 3700 feet.

6th.—Weather fine; leave Jawanabad at 4 a.m., and pass through the village of Khurz. Then cross a low range of hills, elevation about 4200 feet, descend on to a great plain, and halt at its lowest point; drainage, east. Rising uneven ground connects the Kuh Zar range with the hills just passed over.

7th.—Weather fine; march at 4 a.m., the Kuh Zar range on the left, and halt at Chah Farrakh. Elevation about 4000 feet.

8th.—Arrive at Turut, the road descending the whole way. Turut is a town containing a population of about 800 or 1000 people. It is very ancient, and formerly possessed a fine citadel, the ruins of which are still standing. Wheat and other crops are cultivated here. Latitude, 35° 24′ 31″. Elevation about 3080 feet. Temperature, midday, 90° in the breeze, 102° out of it. Turut is situated within six or eight miles of the Dasht-i-Kavir, whose brown expanse is visible stretching away like an ocean bounding the horizon southwards, over an arc of nearly 180 degrees.

10th.—Weather fine; march at 5 a.m. to Rezeh. Rezeh is situated at the foot of a lofty peak of the Kuh-i-Rezeh. Elevation about 4600 feet. The place is in ruins, the Turkomans having surprised the town, and carried off all the inhabitants some years ago. Two or three huts are now all that remain.

11th.—Leave Rezeh at 4.30 a.m., weather fine, and march, descending into a valley, amongst numerous stream beds, flowing south-east into the Kavir. A profusion of grass and bushes about. Then up a stream bed between tamarisk trees meeting overhead, and on over the open desolate plain to Chah Palang. *En route* we passed numbers of locusts, who swarmed over every atom of vegetation, while even the well itself at the halting place was full of their putrid bodies. Elevation about 4480 feet.

12th.—Weather fine; march at 5.15 a.m. to Chashma Belooch, a small spring situated in a dry watercourse. Elevation about 3500 feet.

13th.—Weather fine; a strong north wind blowing; and halt at Chashma Serai Bunab. Elevation about 3500 feet.

14th.—Weather fine; leave camp and march over open ground within a few miles of the Kavir on the right, which extends south out of sight, and after going 16½ miles halt on the Kavir. Elevation about 2890 feet. On the left, to the north, gravelly undulations rise one above the other to the Kuh-i-Shutūr.

15th.—Weather fine; leave camp; road for three miles crosses the Kavir, and then ascends towards Chashma Abul Haiyea, where I halt. Elevation about 3080 feet. Latitude 35° 38′ 48″. For the remainder of the day it blew a regular gale.

16th.—March over open ground, descending gently; at 6½ miles reach the salt river Kal Mura, flowing south-west. This river is known

higher up as the Abresham river.* The section of the water is now 15 feet by 6 inches, and it flows 112½ feet per minute. Section in flood, 6 feet by 180 feet. The banks are thickly covered with green bushes, tufts of grass, and all sorts of shrubs, for at least 50 yards distance to either side. The river comes from the north-east through a narrow valley between the Abul haiyea and Kuh-i-Heizumi ranges; to the south it runs away into the desert towards its unknown destination, its course being marked for many miles by green bushes. 12 or 15 farsakhs off—one farsakh equals three or four miles—it is said to terminate in a vast lake. People living on the Kuh-i-Tarum told me that in winter, when the sun sets to the south-west, the waters of the lake are seen glistening in the sunlight for miles. Camel-drivers who have lost their camels, are said to have followed the river course in search of them, and have found it to terminate in a salt lake whose farther shore was invisible to the eye. This lake is shown on some German maps.

I often observed that when in the vicinity of the Kavir, the wind always blew with considerable force towards its centre, sometimes for two or three days, but there was no return wind. This wind was usually succeeded by a dead calm of a few hours, and in the early morning long filmy streaks of clouds would often appear out on the desert, disappearing as the sun rose higher. Proceeding on, we skirt the Kavir for some distance, and then ascend gradually towards Gil Chashma, a spring near the foot of the Kuh-i-Tarum. As we advanced, the heat, as the sun rose higher and higher in the sky, grew intense, and at midday I halted at a bush, tethered my horse by the head rope I always carried, and spreading out my great coat on a branch I lay down and slept for several hours. On waking up, I remounted and followed the tracks of my baggage until it grew dark, and they were no longer discernible. There was now no sign of a track or footpath anywhere. It was evident that I was lost. I then deliberated as to whether it would be best to make for the mountain in the hope of finding water or else to trace my steps to the last spring. Persian mountains are often waterless, so I decided on the latter alternative, and rode slowly back, firing an occasional shot from my revolver in the hope of attracting my servants' attention, but without success. After an interval of about half an hour, I saw a small spot of light miles away at the foot of the Kuh-i-Tarum. Toward this I hurried on, and arriving in camp, found that my servants had lit three large fires on a hill just by the camp, and that it was these which I had mistaken for the light of a lantern from the distance I was off. On

* So Clerk ("Notes in Persia, Khurasan, and Afghanistan," 'Journal R. G. Society,' vol. xxxi. 1861), who, according to latitude above shown, must have crossed the Kal Mura at, or very close to, the spot where it was reached by Lieut. Vaughan. The two travellers may have followed the same road from Tarum to Zanghada, or *vice versâ*, for Clerk was returning from Herat westward.

the hills to the north is a small hamlet called Shaikh Abdul Husain Núri. It is a place of pilgrimage, and is at an elevation of about 4730 feet.

19*th.*—Weather fine. March to Girdab, over country as desolate as usual.

20*th.*—Weather fine. March to Chashma Dubor, crossing a valley covered with an abundance of bunch grass. Numerous deserted *gallas*, or shepherds' camps, show that large flocks of sheep graze here in the early spring. Cross a dry stream in the centre of the valley which flows into the Kavir to the west, and crossing a range of low hills descend to Dubor and halt. Elevation about 3300 feet. At this place we meet a caravan of tobacco from Tabbas and bound for Teheran. This is the first party of travellers we have met since leaving Samnan.

My servants here had a row with my camel-driver, who had several of his teeth knocked out in the struggle, while the guide pursued him with a drawn sword, saying he would have his blood. I could not find out what was the origin of this disturbance, but succeeded in transferring the driver to the other caravan and getting another man and camels from them in exchange.

22*nd.*—Weather fine. Leave Dubor at 3.15 a.m. Descending through the hills we emerge on to an open plain bounded south by the Dasgirdun range, and at 7½ miles reach the bed of the salt river Kal Lada, 250 yards in width from bank to bank, and now containing a rapid stream 12 feet broad by 3 inches deep; in flood its depth would be from 2 to 3 feet. Its water is less salt than that of the Kal Mura; it flows from the hills on the north through an opening, and goes off in a south-westerly direction into the Kavir. After crossing it we halt 4¾ miles to the east of it in the desert. Latitude, 35° 5′ 52″. Elevation about 2950 feet. Numbers of high tamarisk bushes grow here.

23*rd.*—Weather fine. Leave camp and march to Doruna, along the foot of a high range of hills.

Doruna is a small walled town containing about 300 or 400 inhabitants. It obtains its water from a high peak of the range to the north, called the Kuh-i-Doruna. Latitude, 35° 10′ 23″. Elevation about 2900 feet.

The plain here is said to extend north-east as far as Anarbat, on the road from Damaghan to Kuhi Khaf.

The people here were very civil and obliging.

24*th.*—Weather fine. Temperature 90°. Leave Doruna at 12.40 midnight, and march to Kavir Khúshk, across a plain formed of a vast expanse of hard and smooth clay, subject to inundation in rainy weather.

Kavir Khúshk is a small village at an elevation of about 3620 feet. The inhabitants were the reverse of civil, and stole some of my spoons and a *mussuck*.

26*th.*—Leave Kavir Khúshk at 5.40 a.m., and march to Yakáb, a small

hamlet at an elevation of about 4900 feet, surrounded by a group of hills, the highest of which is the Kuh Sarhangi or Kuh Yak Ab, I am not quite certain which.

30*th*.—Leave Yakáb and after crossing a pass 3500 feet in elevation descend on to the open plain and halt at the village of Chah Pali. This place is inhabited by the Arab-i-Zeigzini, a pastoral tribe numbering in all 300 tents; they are quiet and peaceable. A woman who had been married six years and was childless was brought to me by these simple people, in the hope of my being able to cure her. Wherever I went the Persians seemed to think that I was a doctor. Elevation 4650 feet.

July 1*st*.—Weather fine. Leave Chah Pali at 3.30 a.m. and descending throughout the march arrive at a *hauz* (water-tank) on the road side. Elevation about 3570 feet.

The high road from Mash-had to Yezd passes through here. Going by existing maps, I had expected to be able to reach Bajistan in a few days, but was unable to do so, being compelled to make a detour to the south by Nagenau, to avoid the impassable *Kavir of Bajistan*, which intervened between my present camp and the city of that name. Three marches along the west border of the Kavir in a southerly direction over desolate country brought me to Nagenau, where I arrived on the 4th of July. The march lay over fairly level ground.

Nagenau is a flourishing town situated on an open plain (which affords good grazing) at an elevation of about 3300 feet. It contains a population of about 600, who subsist chiefly by cultivating the soil, the chief crops being wheat and tobacco.

There is a fine caravanserai here which was recently built, but it was full of scorpions, some of which were the largest and blackest I have ever seen.

6*th*.—Leave Nagenau at 6.30 p.m. Temperature 101°. The road descends gently over open ground towards the Kavir, which it soon commences to pass over. About half-way across, a salt stream flowing south is reached. This is crossed by a bridge built two years ago, the former one having been carried away by a flood. The Kavir is said to extend south nearly as far as Tun. Just before sunrise we reached the Hauz-i-Haji Abbas.

During the next day we remained halted, the thermometer registering between 104° and 106° at midday in my tent.

The next night's march brought us to the Hauz-i-Haji Mirak, and the night after to the village of Mathrabad, situated amongst a group of hills between the Kuh Kasimabad range on the north, and the Zangi Kuh range on the south. Elevation about 4400 feet.

Leaving Mathrabad on July 10th, we arrived at Bajistan about midday.

Bajistan is a city containing about 1000 houses, a ruined fort, and a dilapidated caravanserai. The Governor is a Naib, and is subject to

the Khan of Tabbas, whose son he is. The people here remembered well the visit of the Sistan Mission, which seemed to have much impressed them, and they appear to have been highly gratified by the presents which they then received, all of which were described to me minutely.

My tent having been torn to pieces in a storm, and the caravanserai being unfit to live in, having no roof, I put up in a subterranean excavation just outside the city. The Governor, when he came to call, seemed much amused at my condition, owing to the length of my journey, which had caused most of my kit to go to pieces.

There were large quantities of fruit and vegetables obtainable, which were welcome after eating nothing but dried and salted food for days.

A considerable manufacture of cloth and silk goods is carried on, and there is a moderate amount of wheat and barley grown.

Fish of from 1 lb. to ½ lb. abound in the *kanats*, or underground streams by which water is brought to the city. Many of them are blind, and the inhabitants, for some reason or other, never eat them. Elevation 4800 feet.

Three short marches from Bajistan, over a high range of hills, through a pass 4800 feet in elevation, took me to Jumain, the chief town of a cluster of about fifteen villages, constituting the township of Gunabad. The population of the plain is very large, the greater portion being nomad, who, however, never remove beyond the neighbouring hills.

The journey, though interesting, was rather a trying one, owing to the heat experienced, the scarcity of water (which necessitated long marches), and the absence of fresh provisions.

My own opinion regarding the Kavir is that it extends uninterruptedly from 52° 45′ to 57° east longitude, without any break whatever, and that about 54° 15′ its bed is slightly elevated, forming a dryer region, across which the road from Yezd to Damaghan runs. It contains, I believe, two great depressions, one immediately south, and at the foot of the Gugird Hills, the other at the point formed by the junction of the Kal Mura and Kal Lada rivers, both of which depressions pretty certainly contain vast sheets of water in the rainy season. As regards the southern border of the Kavir, I cannot speak with any certainty.

My observations for altitudes are only approximate, though corrected for temperature. The latitudes were taken with a 6″ sextant, from meridian altitudes of the sun and altitudes of the North Pole star, time being taken by a half chronometer, which kept going fairly accurately throughout.

The insect and animal life of the desert consisted of the wild ass, snakes, lizards, scorpions, spiders, and beetles. Birds: the vulture, raven, and, if I remember rightly, a few doves.

All the snakes I saw were brown, exactly resembling in colour and

appearance a piece of dead stick. Some of them would climb bushes, and hitching their tails round a bough would stick their bodies out in imitation of a withered branch, and thus remain motionless for hours. My servants said that they were waiting for a bird to come and perch on them, when they would immediately strike it. None of the snakes I saw exceeded three feet in length; they were usually from 18 inches to two feet long.

Scorpions of all sizes and of various colours abounded, especially in dry and sandy places. There was also a curious spider called the *dumluck*. He had long hairy legs, formed of shell, like those of a crab, while his body was soft and attained the size of a walnut. They had no tails, but were provided with two pairs of curved crab-like claws, which carried a row of teeth like a saw on their inner surface. They spin no web, but run about on the surface of the ground with great velocity, seizing any beetle or other insect which falls in their way. The natives say they are very poisonous, and that all insects living in the desert are so, even though the same species may be found harmless elsewhere.

A

JOURNEY TO BONTÚKU,

IN THE

INTERIOR OF WEST AFRICA.

BY

R. AUSTIN FREEMAN.

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A JOURNEY TO BONTÚKU,

IN THE

INTERIOR OF WEST AFRICA.

By R. Austin Freeman.

Map, p. 200.

The tract of country which I propose to briefly describe, and which I traversed when accompanying as medical officer an expedition despatched by the Government of the Gold Coast in 1888, lies to the north of those portions of Upper Guinea known as the Gold and Ivory Coasts. It is contained between the meridians 0° to 4° W., and between the parallels 5° to 10° N., and includes portions of the countries of Fánti, Assín, Adánsi, Ashánti, Jáman, and Grúinsi, the four former being inhabited by various branches of the great Ochwí family, and the latter by pagan aboriginal tribes, whose affinities will be discussed hereafter, and by large numbers of a Mahommedan people called Wongáras.

The most intelligible manner in which to present a description of the country passed through will, I think, be to follow the expedition in its progress and note the physical character of the regions and the objects of interest met with from day to day, reserving a few points of particular interest for subsequent consideration.

It will be convenient to consider the journey in the following sections:—1. Cape Coast to Prasu. 2. Prasu to Kumassi. 3. Kumassi to Bontúku.

1. Cape Coast to Prasu.

The first day's journey, after leaving Cape Coast, led through an undulating country covered with bushes 10 to 20 feet in height, amongst which various trees were thinly scattered, the silk-cotton and its allies being most conspicuous. On the surface was a highly ferruginous sandstone, and masses of quartz were seen in abundance.

On the second day a marked change occurred, and the country, as the trees increased in number, gradually began to assume the character of forest; new forms of life, both animal and vegetable, made their appearance; ferns became numerous; huge creepers hung in loops from tree to tree; the oil-palm appeared at increasingly frequent intervals; and once or twice the road passed through the shady arcades of a bamboo clump. I do not think that these bamboos are indigenous, as I met with none north of the Pra.

Animal life, too, was more conspicuous amidst the shade and moisture

of the forest; numerous butterflies, notwithstanding the dryness of the season, flitted across the path; various beetles, crane-flies, wasps, and other insects were seen in the bushy undergrowth; the surfaces of the ponds were alive with "skaters" and "whirlwigs"; whilst occasional molluscs were seen, even in middle day, creeping amongst the moist herbage. The country was undulating and very gently rising north, the elevation of Mansu being (by aneroid) 350 feet above sea-level. The same sandstone and quartz remained on the surface, and, indeed, continued with little change to the northern limit of the forest.

During the next two days we passed through similar country, the forest becoming gradually denser and the organic forms more characteristic. On the fourth day we arrived at Prasu, situated on the south bank of the Búsum Pra river.

2. Prasu to Kumassi.

Prasu is the northern frontier station of the Gold Coast Colony, and possesses a Government House for the convenience of officers who may be temporarily stationed there, and a camp of the Hausa constabulary. The Pra is at this point about 170 yards in width from the summit of one bank to that of the other. When we crossed it it was very shallow, not exceeding four feet at the middle of the ferry, but the banks were some 40 feet above the water, and I was informed that at the end of the rains it is full to the brim. I proceeded down the river in a canoe, but found the navigation very troublesome by reason of its shallowness and the abundance of snags. Like the other large rivers of this part of Africa, the Pra is invested with supernatural attributes, as its name implies—the Ochwí word Búsum signifying fetish or sacred.

On the 14th we crossed the Pra, and shortly after entered Adánsi, which country we found, after passing Attássi Kwánta, quite deserted. We encountered from time to time remains of villages from which the inhabitants had fled. These presented, for the most part, a clearing in the forest, occupied in part by a plantation of papaws and another of plantains, the remainder of the space being filled up by a mass of herbage and a coarse, strong grass from 12 to 15 feet in height, through which the path was with the greatest difficulty traced.

Almost entirely hidden amidst the rank vegetation were the fast diminishing remains of the houses which had formed the village. These and the numerous human bones against which the foot struck amidst the long grass, told a story as tragic as it is unfortunately common in this region.

On the 15th we crossed the Fúma river, near the south bank of which stand the remains of the village of Fúmasu. This river, at the point where we crossed it, was about 30 yards wide; its bed was rocky and very uneven, rendering fording a matter of some difficulty. On the following day we ascended the Móinsi or Kwíssa hill, the extremely

precipitous southern aspect of which is 585 feet in height, and the northern aspect of which shelves somewhat gently to the village of Kwissa. Owing to the dense forest which clothes this hill, nothing could be made out as to its characters, whether solitary or part of a range. It appeared to consist of the red sandstone which is so constant a feature of the forest region. Another day's march brought us to the deserted village of Fómmana, the former capital of Adánsi.

From the Pra to Kumassi no material change was observed in the character of the country; the road, an indistinct track, led through primeval forest which, for five days' journey, was a complete wilderness, devoid of human inhabitants.

The forest of this region appears to be quite different in character from that met with on the eastern side of Africa, consisting of trees of gigantic dimensions rising out of a mass of crowded and matted bush and undergrowth. It appears to present three distinct strata of vegetation:—(1) A mass of herbage not exceeding six feet in height, consisting largely of ferns; (2) the bush, which here rises to a height of 50 or 60 feet; and (3) rising out of this the great forest trees, attaining in many cases a height of fully 200 feet. Mingled with the bush and forming a part of the middle layer are many smaller trees, members of the natural orders, Rosaceæ, Anonaceæ, Leguminosæ, &c., as well as palms, among which the oil-palm (Elais) and a singular climbing palm with large recurved hooks on the midribs of its fronds, are conspicuous. The great forest trees, although they obviously belong to many different species, present a very strong family resemblance, the following peculiarities having particularly attracted my attention:—remarkable straightness, relative slenderness and height; absence of branches excepting near the summit, and singular smoothness and regularity of the trunk, and a great tendency to lateral extension of the roots. The trees in the forest rise quite perpendicularly, as I have said, to a maximum height of 200 feet, presenting throughout almost the whole of their extent a trunk as vertical, cylindrical, regular, and smooth as a stone column, and tapering almost as gradually towards their summits. Their barks are mostly quite smooth, like that of the beech, and white or grey in colour.

The circumstance which operates most strongly in producing this extreme degree of vertical elongation is probably the closeness with which the vegetation is aggregated, whence each tree is, in the course of its growth, inclosed as it were in a tube, and can only receive light from a circumscribed opening immediately overhead; to the same circumstance is no doubt, in a large measure, attributable the absence of lateral growth in these great trees and their quasi-acrogenous habits and appearance. This peculiarity of growth is seen even in a more exaggerated form in saplings and young trees than in those which are full grown, the former rising to so disproportionate a height that they appear like slender vines hanging from the summits of the larger trees.

These large trees have a remarkable tendency to extend their roots horizontally over the surface of the ground instead of striking downwards as do the European forest trees, and from the main roots rootlets descend into the surface soil. The roots at their attachment to the butt of the tree are greatly compressed laterally and produced vertically, forming triangular buttresses from 10 to 20 feet in height. Thus the tree cannot be said to be planted in the ground, but rather stands upon its surface, its stability being derived almost entirely from the spreading roots and root buttresses.

That the peculiarities of growth and structure above noted are, to a great extent, the expression of inherent tendencies proper to the species to which the trees belong cannot be doubted, but yet I think that to special conditions of environment are owing the exaggerations of those natural tendencies which are here exhibited; for these structural features become much less pronounced as the special surroundings disappear; and the most typical example, the silk-cotton, when removed from these conditions, does not differ, except in size, in any important particular, from a well-grown European forest tree, its palm-like slenderness and verticality having disappeared and its bole having diminished in length to ordinary tree-like proportions, whilst its root buttresses, although still a noticeable feature, have dwindled to relatively insignificant size and its horizontal roots sunk below the surface of the ground.

It would be out of place in a paper like the present one to inquire in detail into the causes which have given rise to these special features; but I may remark that it has appeared to me that the hard and exclusively mineral nature of the surface soil is the most important factor, and that this condition is maintained in part by the heavy rainfall, by which the surface of the rock is kept in a large measure uncovered, and by the almost complete absence of earthworms, which would find in a surface kept bare by torrents of rain a peculiarly unfavourable condition, and which would be further excluded by their competitors the termites, to which the climatic conditions would be more favourable.

A very characteristic form of vegetation are the vines, which occur in great abundance in the forest in a great variety of forms; they vary in size from the thickness of fine twine to a diameter of 12 to 18 inches. The length of the larger kinds I was not able to ascertain as I could never follow them to their terminations, but I should think that they must be three or four times as long as the largest trees are high. Some of the larger forms have smaller ones twisted closely round them like the spun yarn round a served rope. They lend a striking character to the forest scenery, dropping in some cases as straight as a harp-string from the summit of the largest trees to the ground, in others hanging in immense curves and festoons, whilst others again are drawn quite taut from tree to tree.

These creepers form an excellent substitute for rope, their long cord-like stems being without leaf or branch, and for this purpose they are extensively used by the natives, who tie the beams and rafters of their houses together with them.

The lower forms of vegetable life are also fairly plentiful; many species of ferns, including a curious climbing form which ascends the trunks of the more slender trees for some 30 or 40 feet, were seen; mosses were found covering the decaying trunks of fallen trees, while lichens, mostly white or pale grey, encrust the barks of the living ones.

With respect to the fauna of the forest I am not in a position to furnish much information. We were much too large and noisy a party to fall in with any of the larger animals. In the summits of the trees hornbills and parrots were seen, as well as the three common species of monkey. The spoor of various antelopes, some of very large size, was observed; and I met with the skulls of a boar, a leopard, a buffalo, and a porcupine. These, together with the nocturnal howling of several beasts which we could not identify, were the only indications of the presence of the larger mammals. Insects and mollusca were abundant, and of each collections were made. The belt of forest which we crossed is about 180 miles in width; of its length and extent I could form only a very approximate estimate, but I set it down as 600 miles in length and 90,000 miles in superficial extent.

On the 22nd December, the thirteenth day of our journey, we entered Kumassi, the great city of the forest region, and a brief account of our reception may be of interest.

We were, in accordance with the rules of native etiquette, kept waiting for some thirty-six hours at the adjoining village of Kársi before the king would give us permission to enter his capital. When we started from Kársi we found that a new road had been cleared for us that day, but whether this was an act of courtesy on the part of the king, or whether, as was hinted to me, there were certain things by the side of the regular path which we were not wanted to see, I am unable to say. On the outskirts of the town we were met by a chief who was deputed to act as our guide and conduct us along the route which had been laid down for us; this chief was accompanied by a body of the king's fighting men, who preceded us and testified their joy at our arrival by dancing and discharging their muskets at frequent intervals.

Our party, having been conducted round the town, somewhat after the manner of a travelling circus, presently approached the royal quarter, where we passed a large number of chiefs, each seated solemnly upon a stool and surrounded by his retainers, one of whom held an umbrella over his head. The umbrella, I may observe, appears to be one of the principal insignia of rank, and its character is in a large

measure indicative of the social status of its possessor. On this occasion all kinds were to be seen, from the modest trade gingham or cotton parasol, up to imposing structures of silk and velvet six or eight feet in diameter.

As we neared the place where the king was seated we met with chiefs of greater importance, so, descending from our hammocks, we walked along the line, preceded by our interpreter, who indicated to us the chiefs whose position entitled them to shake hands with us. Most of the latter received us with pleasant smiles and were evidently pleased to be visited by us, but a few regarded us somewhat grimly. After having shaken hands with some two or three score of chiefs we approached the place where the king was sitting. His Majesty was surrounded by a large crowd of men and boys all seated upon the ground or upon the curious and elegant native stools; a band of musicians, playing upon perforated elephant's tusks, struck at intervals slow monotonous chords, while solo performers upon small horns sounded short calls from time to time. There was of course a goodly show of drums, and these presented great variety in form and size; the larger ones were decorated with human skulls and jaw-bones, and having been soaked in blood at the barbarous sacrificial "customs," had the appearance of having been coated with pitch. I noticed that the head of one drum was covered with chalk, and that it was played by drawing the stick across the drum-head, producing a sound much like that of a bass-viol. To the left of the king stood a man waving a feather fly-brush and dancing in a slow and rather foolish manner, whilst to the right was a stunted, misshapen being of somewhat repulsive appearance whose numerous cowrie ornaments proclaimed him a fetish man; this worthy was jerking his body and limbs about in grotesque and rather unpleasant looking convulsions and waving a horse-tail. I may here remark that I encountered at Bontúku a fetish woman who saluted me by simulating an attack of epileptic convulsions; and I think it probable, although I cannot speak with certainty upon the subject, that epileptics are regarded here as possessed of supernatural powers. Still nearer to the king were stationed the guards bearing the state swords, scimitar-shaped weapons, having a perforated pattern pierced in the blades, and a hilt consisting of two knobs with an intervening bar. The hilt is composed of wood covered with a layer of gold.

These state swords are produced on all occasions of importance, and one of them always accompanies the king's messenger when he proceeds to any foreign territory. On the king's left hand was a large armchair studded with bright nails, and in this was placed the royal stool which is analogous to our coronation chair; it appeared to be an ordinary Ashánti stool covered with gold. On this stool the king is seated during the ceremony of enthronement, and he subsequently occupies it once a year, whilst on all other occasions it occupies a place of honour

upon a chair and is covered by a canopy. The king, Kwáku Dúa, was seated under his own umbrella, not under the stool canopy; he was a fairly good-looking young man, inclined to be fat and sleek, and somewhat effeminate in appearance. His person appeared to be exquisitely clean and neat, and his smooth well-kept brown skin was polished with palm oil. His dress was gorgeous but in undoubtedly good taste, consisting of a cardinal red silk cloth richly embroidered, worn in the style of the Roman toga; his head was encircled by a fillet of silk about one inch in width, to the front of which was attached an oblong ornament of gold. A gold ornament was also stuck in his hair at the summit of the back of the head. Large numbers of gold trinkets were strung around his neck and wrists, and on his feet were handsome and well-fitting sandals. His hair was cut short and brushed back in the peculiar Ashánti fashion, exaggerating the naturally conical shape of the head.

The general effect of the group was certainly very striking and suggestive of savage splendour—savage undoubtedly, and the details would not bear close inspection; but the gorgeous colours of the cloths, the massive gold ornaments, the gaudy umbrellas, the strange monotonous music, and the solemn ceremonial, presented a *tout ensemble* that was [illegible] impressive.

When we were presented to the king his hand was held out to us by one of his high officials, it being the correct thing here for persons of high social rank to abstain from using any bodily exertion; and throughout the proceedings the king preserved a wooden stolidity, betraying no interest in anything which occurred.

After having saluted the king we were presented to the queen mother, who received us with much dignity; she was apparently in mourning for her late husband, for her head was shaven and highly polished, and a similar polish had been produced upon the rest of her jet black and rather emaciated person by the inunction of some oily substance.

We now proceeded to the place where we were to sit while the king returned our visit, and having fixed our chairs and drawn up our men we waited the approach of the procession. After a short time the royal party began to file past us, preceded by a body of fighting men armed with long flintlock guns and a few Enfields; then came the chiefs of lesser consequence who marched past us and saluted us individually by making a kind of chopping motion at us with the extended hand. These were followed by chiefs of higher position, who were presented to us by our interpreter and with whom we then shook hands. Near the end of the procession was the ugly little fetish man spoken of above, who now approaching me seized my hand, knelt or rather crouched before me, and rested his head upon my knee; after a short space he moved on and crouched before my two companions, and having thus paid his respects to our party he squatted down in the attitude of a frog and then hopped away after the fashion of that long-suffering reptile.

The next part of the procession consisted of the musicians beating drums and blowing long ivory horns; these were followed by a number of men carrying carved wooden stools which had the appearance of being coated with tar, an appearance which was due to their having been soaked in blood at some of the sanguinary functions which are in vogue amongst this blood-loving people. After the procession of stool-bearers came a number of armed men forming the king's body-guard, dancing furiously, flourishing their long muskets, tossing their shields in the air, and rolling over one another in the dust, making in the meanwhile a fiendish hubbub. After these came the royal party, consisting of the king with his principal chiefs, and his mother and sisters. The king advanced and, having shaken our hands, retired a few paces and executed a slow and dignified dance, at the conclusion of which he again shook our hands and moved off. It may be here remarked that it is the custom for the King of Ashánti, when receiving a friendly visit from persons of unusual distinction, to signify his friendship and respect by dancing before them.

After the king had passed, the royal ladies saluted us, the queen mother offering me the tips of her fingers with obvious trepidation, and then, after a little more hand-shaking with chiefs, we were left in peace to retire to the quarters provided for us.

A short description of Kumassi will close the account of the second part of our journey.

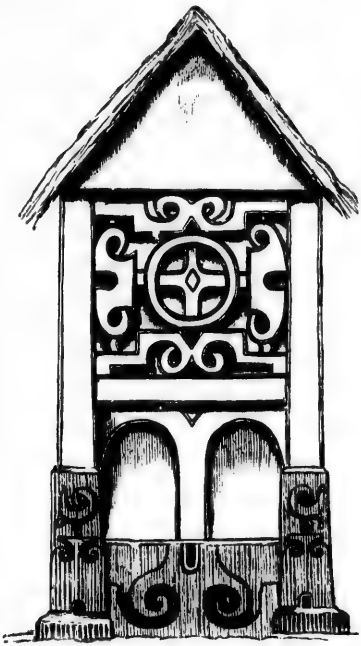
It is extremely difficult to estimate the size of Kumassi, for, in addition to the fact that it consists largely of the ruins of the old town, it has appended to it numerous environs which straggle out to the north-east and north-west; it is now by no means an imposing town, the houses of which it is composed being oblong huts thatched with the leaves of the oil-palm.

The dirty and ill-kept roads which lead from one part of the town to another, cannot be described as streets, since the houses are not regularly placed along their sides, but occur in clusters at irregular intervals. It is probable that before the demolition of the city in 1873 the streets were much more regular, as the pieces of waste ground, which now form the greater part of the town, and are covered by grass from 10 to 15 feet high, are evidently the sites of demolished habitations.

Kumassi presents the appearance of an area of land cleared of forest, but more or less overgrown with grass and sparsely dotted with trees, about which clusters of houses are somewhat thinly scattered.

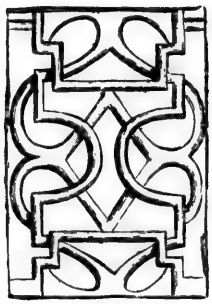
Notwithstanding its present dilapidated appearance there are many evidences that Kumassi was formerly a flourishing and somewhat handsome and imposing city; the remains of the old stone palace, occupied formerly by Kóffi Kalkáli, the present house of the king, the guest-house with its curious and elaborate ornaments, and the well-walled and fenced compounds of the royal quarter, all appeal to the beholder as the marks

"which opulence departed leaves behind," and the feeling of the traveller who surveys the scanty vestiges of the former grandeur and importance of Kumassi is one of regret that the destruction of so much that would be interesting and instructive to the anthropologist, and that would

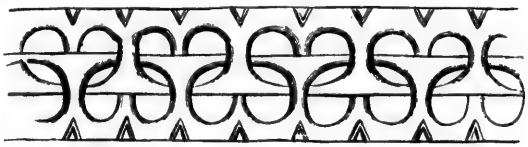


CLAY MOULDING ON FRONT OF HOUSE.

PILASTER OF INTERIOR WALL.



PANEL.



PORTION OF FRIEZE.

ARCHITECTURAL DECORATIONS OF HOUSES IN KUMASSI.

illustrate the industry, enterprise, and artistic instinct of one of the most renowned of barbarous nations, should be chargeable to the most highly civilised of European powers.

The houses of Kumassi are similar to those found throughout Ashánti and Adánsi: they possess only three walls, the fourth side being open like the stage of a theatre; they are raised upon a platform of clay about 8½ feet high, and the floor is reached by a rude step. The front and sides of the platform and the floor are covered with a coat of fine bright red clay, which takes a dull polish, and the walls are similarly treated, or, in some cases, whitewashed. In the better-class houses of Kumassi and throughout Ashánti and Adánsi, the gable ends and fronts of the platforms are decorated with ornaments in bas-relief; these generally take the form of spirals, zigzags, and various interlacing designs. The house in which I was lodged at Kumassi contained a large variety of these ornaments, some of great intricacy and elaborateness and most skilfully executed, of which I made a number of sketches.

The roofs are thatched with the leaves of the oil-palm, supported upon a framework composed of the midribs of certain large palms lashed together with slender creepers.

During nearly the whole of our stay at Kumassi on both occasions I was confined to my bed with fever, hence my opportunities for exploring the town were somewhat limited, and I am unable to furnish much information concerning the details of its appearance. I gather, however, that a good deal of trade occurs in Kumassi, and on entering the second time through one of the northern suburbs, I noticed quite a colony of blacksmiths and carpenters.

The principal industries of the town, as far as I could ascertain, are clay work and pottery, iron work, stool-carving, gold work, the weaving of cotton and silk cloths, and the production of the curious stamped cloths which have attracted the notice of travellers in Guinea. In the immediate vicinity of Kumassi are some large kola-nut plantations, the tending of which, and the picking and disposal of the seeds, form the most important industry of the country.

3. Kumassi to Bontúku.

On 28th December we marched out of Kumassi and resumed our journey through the forest, which was here similar in character to that which we had already traversed, excepting that the undergrowth was somewhat thinner. At this part of our journey we experienced a remarkable degree of cold for this region, the thermometer falling, on one occasion, as low as 55° F. Shortly after leaving Kumassi we crossed the river Óffwin, a large tributary of the Pra, which was here 66 feet wide, deep and muddy.

We now began to look with some anxiety for the open country which was reported to lie a little to our north, but it was not until we had passed Jómo that we began to notice any signs of our approach to it; here, however, such signs were numerous and significant; the vegetation began

to assume quite new characters, and fresh insects and different birds made their appearance. The slender forest trees, with their straight and lofty trunks and horizontal branches, gave place in a large measure to much smaller trees with gnarled and twisted boughs which came off from the trunks comparatively near the ground. Now and again the forest opened out into grassy expanses sparsely dotted with these trees, bearing a striking resemblance to an English orchard. The grass was in places of great height, one stalk which I measured being 17 feet 3 inches from root to summit; there were smaller patches of a fine grass about a foot high, and a large species about 10 feet high, closely resembling Guinea grass on a large scale, was occasionally met with. From this time to the end of our journey tracts of forest alternated with patches of open country, the latter gradually increasing in relative extent as we proceeded northwards, until in the vicinity of Bontúku the forest had dwindled to occasional coppices of comparatively insignificant size.

The country was gently undulating, but here and there were met with hills of small elevation (under 1000 feet) rounded in outline and well wooded. The soil was largely ferruginous, the characteristic deep red sandstone, which is so largely distributed in this part of Africa, being very abundant; but as we travelled north we met, at increasingly frequent intervals, with a yellowish sandy loam, evidently derived from a greyish-yellow non-ferruginous sandstone, of which I observed an occasional outcrop. This stone, which is rather soft and friable, appears to immediately overlie the red sandstone, for on one occasion when passing a hill on the side of which the strata of the yellow stone were exposed, although the surface soil was obviously derived from it, yet the ant-hills and even ant-castings were bright red and evidently derived from the red stone, which cropped out a few miles further on our route. I observed this condition more than once, but never saw yellow ant-hills on a red surface. The conditions met with in the Bontúku plain also bear out this view, for here the surface soil is yellow, excepting near the base of Mount Knutsford, where it is of the red colour characteristic of the iron sandstone, and Mount Knutsford is entirely composed of the red stone, but these are clear proofs of the former existence, at its summit, of beds of a softer rock, which have been entirely removed by atmospheric erosion. At all parts of our route fragments of quartz were met with in abundance, and occasionally masses of a fine-grained granite.

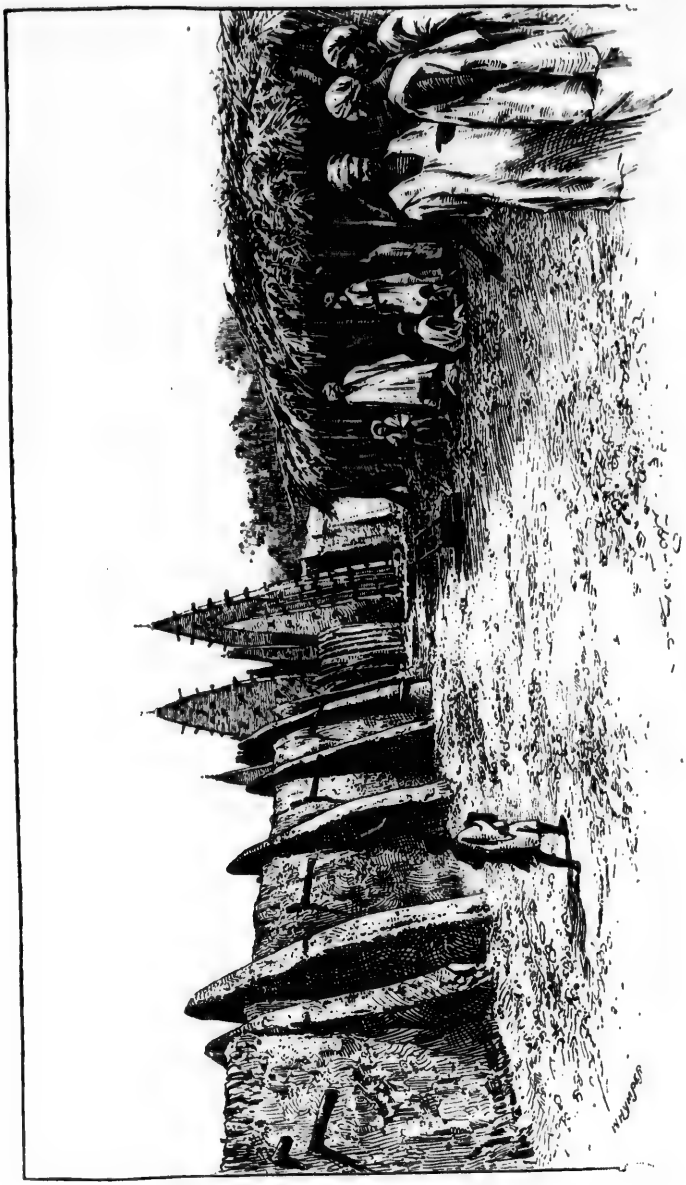
The kingdom of Jáman, which we had now entered, lies to the north-west of Ashánti and is about 9300 square miles in extent. It adjoins Ashánti to the south-east, where the boundary is a little to the south of Tánosu; it is coterminous with the Bóri district of Grúinsi to the north-east, the boundary being at Táari; with Kong (or Pong) to the north-west, the boundary being the Kúmo river; and with Séhwhi to the south and south-west, the boundary being at Bénti Krum.

The town of Bontúku (situated in lat. 8° 6′ N., long. 2° 30′ W.) occupies the centre of a somewhat undulating plain girt by a horseshoe-shaped range of hills.

Seen from the south-east, the direction from which we entered it, Bontúku presents, for an African city, a peculiarly attractive and imposing appearance. The ground upon which the town stands rises very gently northwards, so that the houses and other buildings appear in successive tiers like the benches of an amphitheatre. The Wongára quarter, which constitutes the principal part of the town, is composed of long flat-roofed houses, which often occupy the whole length of a street; these houses are constructed of clay and the walls are strengthened at regular intervals by buttresses surmounted by pinnacles which are often tipped by ornaments of silvered glass, and the summit of the wall between the buttresses is, in some cases, occupied by a row of smaller pinnacles. In some of the better class houses the walls are washed with a stone grey distemper, and are sometimes pierced by ornamental apertures converting them into a sort of fretwork. The one I occupied, a typical Bontúku house, consisted of two communicating quadrangular compounds, on two sides of which were sets of rooms, small, lighted and ventilated only by the doorway, and dark and stuffy; the ceilings were formed by the beams of the roof, and were infested by various kinds of vermin. The floors were of clay stamped down hard. The flat roofs were surrounded by low parapets and the rain was carried off by waterspouts of wood or baked earthenware. Access to the roofs of the houses is obtained by means of a rude ladder formed of the bough of a tree in which notches are cut; on the roofs the people may generally be seen at eventide enjoying the cool breeze and exchanging local gossip, and in their gaily-coloured caps and gowns, present a very picturesque appearance.

There are three mosques in Bontúku. One of these does not differ remarkably from a large dwelling-house, but the other two are very singular and interesting buildings. They are almost identical in structure, but the one situated in the centre of the town, although somewhat the smaller, is more highly finished and decorated, and at this the Limámu (Imám) usually officiates.

It is a nearly square building, and has two towers, which occupy its east and west aspects respectively. These towers are four-sided, and terminate above in pyramidal spires, each spire being surmounted by a finial consisting of an inverted basin, above which is a silvered glass goblet—both of European manufacture—and over all an ostrich's egg. Besides the two main spires there are numerous pinnacles of various sizes, each surmounted by ornaments similar to those above described, which, notwithstanding their incongruous nature, are very effective at a little distance. The mosque is inclosed by a wall, the top of which is ornamented by a row of truncated pyramids surmounted by spheroidal

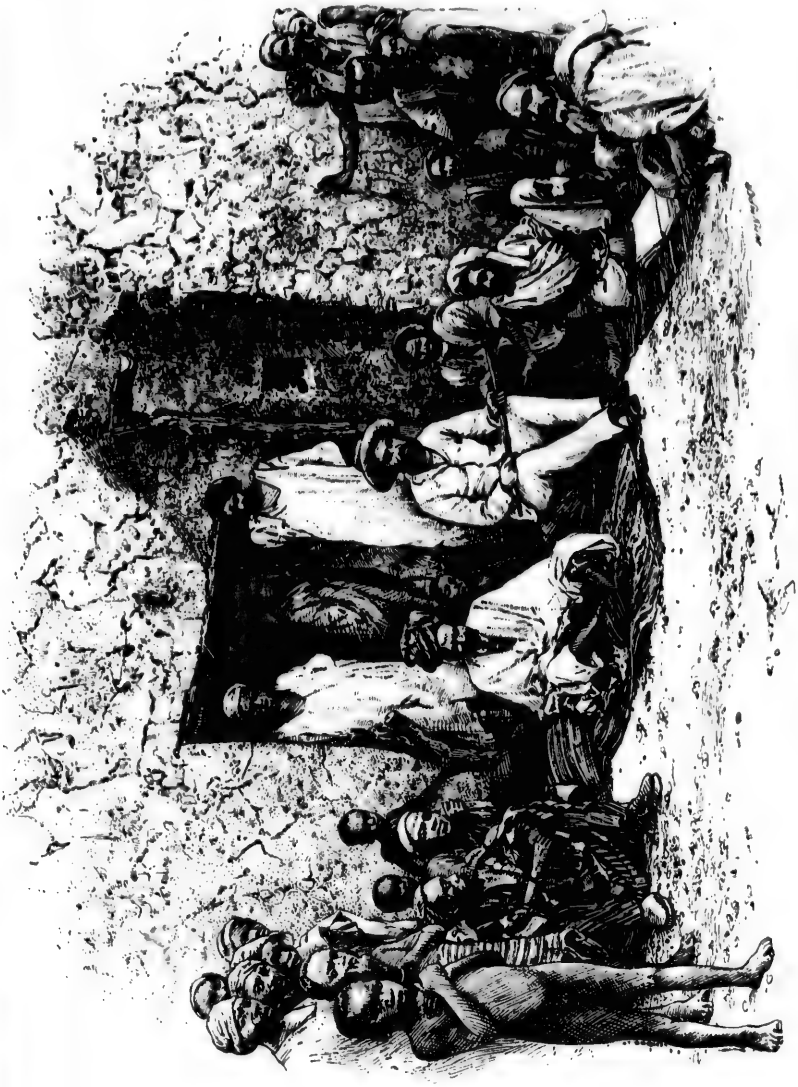


STREET IN BONTUKU.

finials. The ends of the beams forming the framework of the spires project externally about two feet, and the rows of these projections, when seen from a distance, recall the appearance of the crockets which adorn some of the later Gothic spires. It will be remembered that the same peculiarity was observed by Barth in the tower of the mosque at Agades. I was unable to examine the interior of the building, but I gathered that it consists of a square hall, on the east and west sides of which are recesses formed by the towers. Although rude and barbarous in their details on close inspection, the mosques, when seen from a sufficient distance, appear rather graceful and handsome buildings, and exhibit conceptions of exterior decoration and architectural construction far in advance of the most finished productions of Ashánti, although they are decidedly inferior to the latter in the execution of detail, and are entirely without sculpture.

As with individual buildings, so it is with Bontúku as a whole. Mean and rude when seen from a near point of view, its imperfections fade away, and its faulty details disappear as distance is increased, until from a distance of a mile and a half it appears as a not merely picturesque but beautiful and striking city.

Near the centre of the town is a large oblong space, which communicates through a large gateway with an oval space, in which is situated the house of Ali, the principal Wongára chief. In the former space the market is held daily, although there is a special market day recurring at intervals of about six days. The centre of the market-place is occupied by a double row of stalls, mostly presided over by Wongára women; on these stalls, which consist of mats spread on the ground, calabashes, circular trays of basket-work, wicker bags, wooden trenchers, &c., are exhibited various articles of food, as yams, rice, cocoa yams, beans, ground-nuts, pigeon peas, shea butter, a kind of aromatic, sweet-smelling nut, melon seeds, maize-flour, bean-meal, balls of a paste made from the seeds of the baobab, and other articles too numerous to mention. In the shade of a tree at the upper end a group of Hausa merchants usually assemble, and the rows of booths which line the market-place on either side are similarly occupied. Here are sold articles of European manufacture, principally cotton cloths, mirrors, cutlasses, fish-hooks, and articles imported from the more civilised districts of the interior, Timbúktu, Jénne, and the Upper Niger towns, and Sókotu, Káno, and the great towns of the Lower Niger and Bénue districts. These comprise woollen rugs from Timbúktu, Jénne, and perhaps Káno; cotton gowns and trousers, beautifully embroidered in white and green, amongst which the celebrated guinea fowl pattern is common, from Káno; spear-heads and iron implements from Móshi; circular grass trays, handsomely coloured and prettily designed, from the same country; antimony and leather stibium-cases from Káno; sandals, slippers, and other leather work from Hausa and the Mandíngo



DR. FREEMAN RECEIVED BY THE IMAM OF BONTÚKU.

towns, especially Kong; thick cotton cloths from Móshi and Gazári; woollen hooded cloaks, dyed orange, purple, and crimson, from Kong and Timbúktu; and innumerable smaller articles of use and luxury. The more important business transactions appear to be conducted at the private houses of the merchants, in fact I was told that the more wealthy merchants considered it beneath their dignity to expose their wares in the market.

From what I could learn, Bontúku seems to be an important market for the sale of slaves, who, in this district, appear to be the most important articles of barter. The slave market was, however, suspended during our stay in the town, and I saw only two slaves exposed for sale. These were strong adult men, natives I think of Grúinsi; they were coupled by a rope passed around their necks, and were being taken to a market a few days distant. It is difficult to estimate the commercial importance of Bontúku, as the presence of our escort kept the greater part of the timid and suspicious strangers away from the town, and thus greatly diminished its trade; but there can be no doubt that Bontúku holds a high position among the market towns of north-west Africa, although it has probably somewhat declined since the breaking up of the Ashánti kingdom.

The surface soil of Bontúku is a yellowish-grey loam resting upon an immediate subsoil of gravel composed of angular fragments of quartz, mostly small, from half an inch to one-fifth of an inch in diameter. This, I think, rests upon a clay bed, as the wells contain a milky turbid water, and the mud of which the houses are built is very cohesive and hard, forming, with the fragments of quartz which are imbedded in it, a sort of artificial breccia.

The other Jáman towns which I visited differed entirely from Bontúku, as, being inhabited almost exclusively by the pagan aborigines, they were composed of rectangular or circular huts, having the roofs thatched with grass and leaves. Their streets were narrow, tortuous, and dirty, and there was a complete absence of that bustle and activity which characterised the capital.

In the palmy days of the Ashánti kingdom there was an important traffic between Kumassi and the large towns of the remote interior, a traffic which gave rise to certain recognised caravan routes; of these the most important were those connecting Kumassi with Timbúktu and Káno, the great foci of Mahommedan commercial enterprise. These roads, although much less frequented than was formerly the case, still exist—the eastern one passing through Júlasu, Sofára, and Massina to Timbúktu, while the western one passes through Yéndi (Dagómba) and Bórugu to the Hausa states. The latter road appears to bifurcate at Yéndi, the eastern offshoot proceeding through Wúrga-Dúku, the capital of the Móshi kingdom, Mandóli, and Bánya-Gérra to Kábara, the port of Timbúktu.

From various causes, of which the suspicious and treacherous character of the Ashántis was no doubt the chief, the great market towns in which produce from the far interior was exchanged for the productions of Ashánti, grew up at the extreme periphery of the latter kingdom, and of course on some part of one of the caravan routes. Thus on the eastern road have sprung up the towns of Kantámpo and Sálaga, and on the western road Bontúku. These towns possess in common the somewhat curious feature that they have been built and are inhabited in the main by people quite foreign to the district in which the town is situated. In the case of Sálaga, the inhabitants are mostly Hausas, Fulas, Dagombas, Moshis, and members of the various Mahommedan tribes of the southern Soudan and Niger districts. The same is largely true of Kantámpo, although there a considerable sprinkling of Wongáras exists. Bontúku, on the other hand, is, as I have pointed out, simply an outpost of Kong, having probably been formed by the settlement in it of Wongára merchants, who were engaged in the traffic between Timbúktu, Kong, and Kumássi.

Thus Bontúku, although the capital of Jáman, is not in any way a representative Jáman town, since the aborigines occupy only a single outlying suburb. Moreover, as in the case of Sálaga, the king does not reside in the capital, but has a royal town (Sáppidi) a day's journey to the westward.

The Jáman towns which we met with—Sóko, Síki-Sóko, Diádasu, and Dibábi—were totally different in aspect from Bontúku, the comparatively regular streets of flat-roofed houses, with their buttresses, decorated pinnacles and distempered and often fretted walls, giving place to more irregular agglomerations of rectangular or circular mud huts with ragged roofs of palm or grass thatch. Nevertheless, many of these towns are of considerable size, the most important being, in addition to those above mentioned, Chédyo, the town of chief Kókobu, said to be as large as Bontúku; Sáppidi, the town of King Ajiman, of Jáman; Kwésinda, the town of chief Pápi; Mo, the town of prince Díawúsi; and Bánda, the capital of the tributary kingdom of the same name.

The most considerable towns in the vicinity of Jáman are Kong, Bori, Bona, Wa, and Kantámpo.

Kong, Pong, or Kpom, as it is variously pronounced, a large and flourishing city lying about 100 miles to the north-west of Bontúku, is one of the most important of the Wongára towns. Judging from the many descriptions I heard of this town, I should think that it is very much like Bontúku on a much larger scale. Its inhabitants are almost exclusively Wongáras, as is the king, who is of course a Mahommedan. Among other features Kong possesses a large mosque, of which those at Bontúku are said to be reduced facsimiles.

Most of the particulars which I learned about Kong were gathered

from Wongára or Hausa merchants, who had come down from that city to Bontúku to trade. These men brought with them various cotton and woollen cloths of very superior manufacture, handsome knitted cloaks, with tasselled hoods dyed purple and yellow, leather work, weapons, and iron implements, which they told me were made in Kong, the magnificence and commercial importance of which they described in glowing terms.

Bóri is a town somewhat smaller than Bontúku, situated about 45 miles to the north-west of the latter. It is inhabited by Grúinsis, and appears to be a typical specimen of the towns built by that nation. The houses, like those in Bontúku, are flat roofed, and are built in regular streets, but they have the remarkable peculiarity that the only openings, either for ingress or ventilation, are in the roofs, to which access is obtained by rude ladders. The object of this arrangement is evidently protection from the neighbouring Moshis and the various Mahommedan tribes who appear to raid with one accord upon the timid, defenceless Grúinsis for the purpose of enslaving them.

Bóri was described to me as a cleanly, busy, and prosperous town, with a large market, in which the principal articles exposed for sale were slaves, horses, and asses. There is a floating Mahommedan population, but this is relatively much smaller than that of Bontúku. The language of Jáman does not appear to be understood in the district. The town of Bóri appears to be at present the capital of a small kingdom, which is coterminous with Jáman, the boundary being between the villages of Táari and Kamála, somewhat nearer to the former.

Wa appears to be a town of considerable importance, somewhat larger than Bóri, from which it is situated about 40 miles due north. Its inhabitants appear to be exclusively Mahommedan, but I was unable to obtain any reliable particulars about it.

Bóna is a considerable market town about 30 miles due north of Bontúku; it appears to be the capital of a small independent state, the boundaries of which I could not ascertain.

Mountains and Rivers of Jáman.

A few words may now be said concerning the mountains and rivers met with in Jáman and its neighbourhood. In all the maps of Africa which I have met with there has appeared a range of mountains running parallel to the coast of Upper Guinea, and described as the "Kong Mountains." The different maps have not been in entire agreement as to the extent of this range, its distance from the Guinea coast, or the height or abruptness of its individual peaks, but all have agreed that there exists such a range with such a name. Hence, when I found myself in the more or less near vicinity of these mountains, I naturally made a good many inquiries about them with a view to ascertaining their

precise position, extent, and altitude. These inquiries were in most cases addressed to Wongára merchants, who had come to Bontúku from Timbúktu or Jénne, viâ Kong, and had therefore passed through the tract of country which, according to the maps, was occupied by the Kong Mountains; but these men utterly denied having crossed any mountains, hills, or even perceptibly rising ground. They agreed in describing certain isolated hills of no great elevation at various points in their route, but these could not by any stretch of imagination be worked up into a great range like that represented on the maps. I was hence driven to the conclusion that the Kong Mountains are purely imaginary, at least in the vicinity of Kong; and that their existence in the maps is probably attributable to certain vague reports of travellers in the regions lying to the north, who, having seen in the distance hills of uncertain elevation, and knowing them to be situated at or near the water-parting which separates the Niger valley from the watersheds of the great rivers of Upper Guinea, have inferred the existence of a great mountain range at the said water-parting.

Of the hills actually seen by me, none were of great elevation. A range of a somewhat horseshoe-like shape partly surrounds the plain in which Bontúku stands, the highest member of which—a conical peak not exceeding 1500 feet above its base—I named, after the Governor and Commander-in-Chief of the Gold Coast, Mount Brandford Griffith. An outlier of this range, which I have named Mount Knutsford, bearing due north from Bontúku, I ascended, and its peculiar conformation merits a short description. It is roughly conical in shape, and rises somewhat abruptly to a height of about 1400 feet above its base. Notwithstanding the steepness of its sides, its summit is occupied by an absolutely level area about 8000 yards in superficial extent, which is entirely covered by masses of dark red, hard sandstone, varying from two inches to twelve feet in diameter. From this summit several hills and plateaux can be seen to the north and west, all presenting the same peculiarity of form, all having the same precipitous sides, and the summits planed off to a dead level. The cause of this curious feature was quite obvious. There was abundant evidence of the former existence at the summits of these mountains of beds of a soft yellow sandstone, the removal of which, by atmospheric erosion, has left exposed the upper surface of the harder red sandstone, of which the body of the hills is composed. The natives did not appear to have any special names by which to distinguish these mountains, and I was hence compelled to apply to them the names which I have given above.

The most remarkable rivers which I met with in this neighbourhood were the Firáu, Adári or Volta, and the Kúmo, Táburugú (or Grand Bassam river). The former, I gathered, rises near to the town of Wúrga-Dúku, the capital of Móshi, in about 11° 40′ N. lat.; its course is shown in the accompanying map.

The Kúmo river rises, as I was informed, in a hill named Kúnyan-górra, situated to the north-west of Kong, about half-way between that town and Sego-si-korro. From this point it travels in a south-easterly direction, passing eastwards to the north of Kong; it then bends, first to the south and then to the south-west, passing between Kong and Bontúku. Its subsequent course was not known to the natives, but I have no doubt that it is identical with the Grand Bassam river. The only other river of any considerable size met with was the Táin (or Tyn), which, rising near Bontúku, passes at first to south-west and afterwards to north-west, falling into the Volta at Lóa, the precise position of which town I could not discover.

The aborigines of Jáman are a people whose relationship I could not satisfactorily make out. That they are entirely distinct from the Ochwí races is shown by the fact that none of our Ochwí followers were able to acquire any knowledge of the language. They present some points of resemblance to the Krus—a fact which was very strongly insisted on by our native attendants, and in appearance bear some likeness to the Grúinsis. They are a sturdy, strong race, stouter and taller than the Ashántis, to whom, however, they appear inferior in intelligence, energy, and courage; and, judging from the aboriginal towns where the Wongáras have not yet settled in large numbers, their civilisation is of a lower type. In the larger towns the Wongáras are forming settlements, and will probably, in time, to a large extent, exclude and replace them.

The Wongáras.

The Wongáras are a people inhabiting a tract of country, rather ill-defined as to its boundaries, lying to the north-west of Ashánti, and extending to, and including, Bámbarra and certain other of the Upper Niger districts, Kong, and North Jáman.

The natives of Bámbarra are referred to by Mungo Park as Mandíngoes, but are described by him as differing in many respects from the natives of Mandíngo proper, and as speaking a distinct although closely allied language. I was enabled to identify them as Wongáras by certain natives of Sego-si-korro, who assured me of the identity of the race, and their statements were confirmed by the closeness with which Park's descriptions of the towns of Bámbarra and the habits of their inhabitants are applicable to Bontúku and its Wongára inhabitants.

The character of the buildings does not, indeed, serve to differentiate the various nations and tribes of the Upper Niger valley, for one system of building appears to be characteristic of the whole of that part of Africa, in which the Saracenic influence was strongly felt; and of that part very characteristic and in striking contrast to the methods of house construction in vogue amongst the less civilised Pagan tribes. For not only do buildings like those of Bontúku occur in Sego, Jénne, and Timbúktu, but Dr. Barth's drawings of Agades, Tintellust, and the

other towns of Asben and the Tawárek show that in a more developed, or rather less degraded, form, it extends nearly to the shores of the Mediterranean.

The Wongáras are not the indigenous inhabitants of Jáman, but have entered and settled in amicable relationship with the aborigines, whom they will, no doubt, in the course of time supplant. It is probable that Bontúku, the only Jáman town at present largely colonised by them, was supplied with its Wongára element mainly from and through the influence of the important neighbouring town of Kong, of which the inhabitants appear to be exclusively Wongáras. They appear to have settled in Bontúku as traders, and, living together in one quarter of the town, built their houses in their national style, eventually establishing a distinct Wongára quarter; this has extended, mosques and a market place have been added, together with the large dyeing wells, until at the present day the town of Bontúku is a Wongára town with a Pagan quarter on its south-east outskirts forming a mere suburb.

In appearance the Wongáras bear a good deal of resemblance to their near relatives the Mandíngoes, being somewhat tall and spare; their skins are generally black, and lighter tints indicate an admixture of Fulah blood. The hair is woolly, and the features are of the Negro type, notwithstanding that the expression is lively and intelligent. Indeed I am not quite confident in referring to "Negro features," for the term appears so extremely ill-defined as to convey little more than a tendency, more or less marked, to obtuseness and prognathism, and to include such widely differing forms as the Krus, with their enormous jaws and flat and broad noses, on the one hand, and the Hausas and Mandingoes, with relatively small jaws and small and shapely noses and mouths, on the other. It is to the latter group of Negroes that the Wongáras belong, being, in fact, a branch of the Mandíngo nation, and speaking a language which is little more than a dialect of Mandíngo.

Like all the Mahommedan peoples of this part of Africa, the Wongáras are inordinately fond of the kola nut, which they chew monotonously, like ruminants chewing the cud, at all public and private conferences, accompanying the process with copious and frequent expectoration. As the result of this habit their lips are generally dusted with bright orange-coloured particles of the nut, and their teeth stained a vivid Indian red by its juice, a character much admired by themselves, but less appreciated by Europeans.

The Wongáras dress in the style common, with certain modifications, to the Mahommedan nations of north-west Africa. The body is enveloped in a loose gown with wide bell sleeves, which is made from a single square or oblong piece of cloth, in the centre of which an oval head-opening is made, and the corners stitched together a few inches from the bottom. It is thus very similar in design to a poncho, the principal difference being in the formation of permanent arm coverings. Under this an armless shirt of a thinner material is sometimes worn.

The legs are encased in drawers of very remarkable pattern and simple design; like the gown they are made from a single oblong piece of cloth, which is doubled lengthwise and the ends sewn together. A tape is run through the top circumference, and the bottom is stitched together with the exception of a short space at each end, which is left open and hemmed round, forming an opening for the foot to pass through. The width of an ordinary pair of drawers at the waist is from five to six feet (i. e. the circumference is from 10 to 12 feet), and the distance of one foot-hole from the other five to six feet; through the latter apertures the feet are thrust, the whole of the intervening material being gathered up between the legs, and the upper opening accommodated to the size of the waist by means of the tape. The enormous amount of waste material gives this garment a very slovenly appearance. The ordinary head-dress of the middle-class Wongáras consists of a cylinder of cotton cloth about 13 inches high, which is allowed to fall down on one side like a drayman's cap. These caps are frequently made very picturesque by the insertion of pieces of brightly-coloured cloth, and by simple but effective embroidery; they impart to the wearers a very smart and jaunty appearance, and besides being ornamental serve a practical purpose by forming a supplementary and fairly capacious pocket. The alternative of this head-dress is the red fez, of which it appears to be an imitation; not the small tasselled fez familiar to Europeans, but a tall cylindrical structure with a stalk in the crown like a gourd. It is sometimes worn alone, but more commonly forms the foundation of a rude turban, which is made by winding a roll of thin cotton cloth around it horizontally or nearly so, and without any of that graceful twisting and interlacing which characterise the turbans of the more civilised East.

As a nation, the Wongáras are Mahommedan, but many of the lower orders appear to be far from strict in the practice of their religion, or in their attendance at the mosques, and moreover, cases of drunkenness, although rare, were occasionally met with. Most of the elder better-class men have a rudimentary knowledge of Arabic, and may be seen at the close of the day sitting in the shadow of their houses, or in the market-booths, reading their prayers from small manuscripts, or copying them on to pieces of a thick drab paper, the source of which I could not discover. I gave the Limámu a number of sheets of cartridge paper, and had the gratification of seeing his scribe execute some writing upon it. The pen used was an ordinary reed, cut to a somewhat blunt point and split like our own quill pens. The ink was a thickish brown fluid, made, I was told, from certain leaves; it dried with a glossy surface and a colour like sepia. The letters were very coarsely made, and the writing was executed with considerable difficulty and clumsiness. It is the custom, as in Hausa, for the "elders of the church" to write upon small slips of paper certain passages from the Koran—prayers, blessings, &c.—and to give or sell these to less literary

persons, by whom they are folded into small packets, sewn up in leather cases, and worn as charms.

The use of these is by no means confined in this district to Mahommedans, for every man with any pretensions to position, whether Pagan or Moslem, exhibits a greater or less number of them suspended by plaited leather cords either around his neck, arms, or waist, or worn as a fillet around the head. Each of these amulets or "Sáffis" has, as a rule, a particular virtue, some rendering the wearer invulnerable, some protecting against disease, whilst others are more general in their virtues, insuring to their possessors prosperity and long life. Of the latter kind was the Sáffi which was written for me by the Limámu of Bontúku on my departure for the coast. A result of the various virtues of different Sáffis is the necessity of wearing a large number, and many of the chiefs and elders at Bontúku carried such enormous collections that they had the appearance of pedlars.

The principal industries practised amongst the Wongáras are the weaving of thick, soft cotton cloths, and on a smaller scale the weaving of woollen cloths and blankets; the preparation of indigo and its use as a dye; leather-work, as e.g. sandals, slippers, bags, &c.; iron-work, including the making of spears, swords, and agricultural implements, mostly hoes; silver and gold work, but especially the former; the making of glass bangles and armlets by melting down European glass and imbedding beads in the molten surface; the preparation of shea butter; and various minor industries by which their everyday wants are supplied. But they are traders rather than manufacturers, and travel in small caravans into Ashánti to buy the kola nut—the principal Ashánti depot being Akumadai—and carry this to the various large market towns of the interior. They also deal extensively in slaves, journeying sometimes as far as Timbúktu—or, as they pronounce it, Túmbutu—to dispose of them to greater advantage.

My experience of this people led me to regard them as intelligent, industrious, enterprising, and fairly well disposed towards strangers.

Products of the Country.

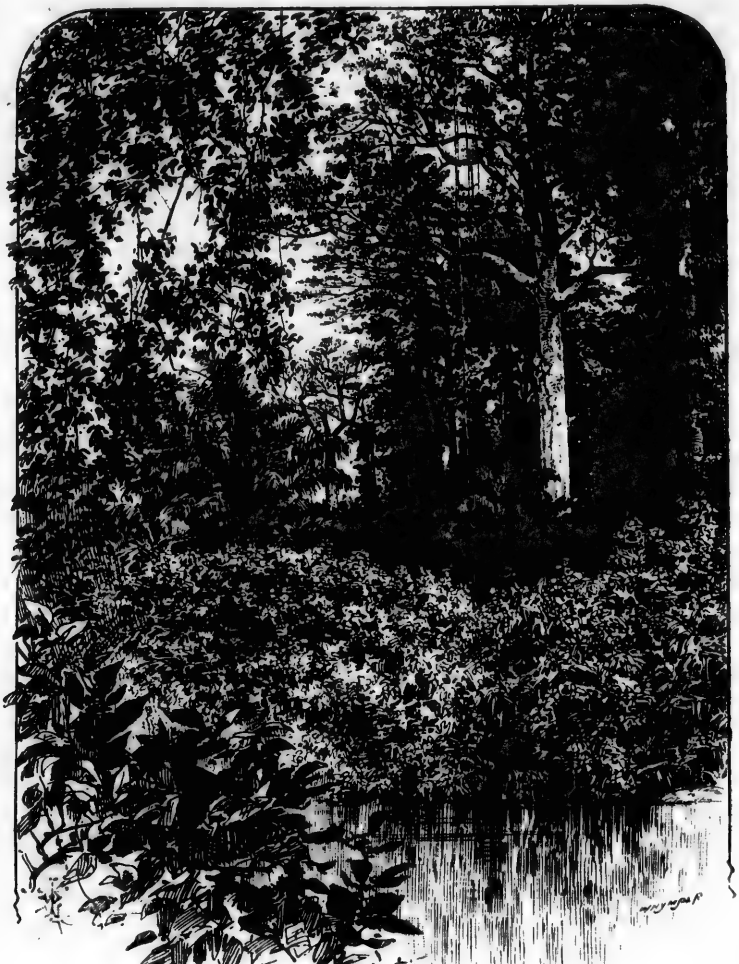
A few words concerning the natural productions of the tract of country above described may fittingly close this paper. The most important of these natural productions are timber, rubber, kola, and shea butter.

It is obviously unnecessary to state that the forest abounds in timber, but it may be worth while to make a few remarks upon an industry which, so far as Europeans are concerned, is almost untouched.*

While speaking of the characters of the forest trees, I observed that

* Since the writing of this paper a considerable timber trade has sprung up in Upper Guinea.

the most striking peculiarity consisted in the remarkable length and straightness of the trunk, coupled with large circumference. Now it does not require to be pointed out that this condition, *ceteris paribus*,



FOREST SCENE NEAR THE OFFWIN RIVER.

greatly enhances the value of a timber tree. The forest region is penetrated by several large rivers, as e. g. the Pra, with its great tribu-

taries, the Birrim and Offwin, the Ankóbra, and the Tánno with their tributaries.

These rivers, although somewhat shallow during the dry season, are during the rains both deep and rapid, and quite capable of floating timber-rafts, or logs supported by floats, down to the coast. The peculiar shape of the forest trees renders them especially easy to manipulate, for if a large tree such as Odúm is felled and its trunk disengaged from the mass of branches at its summit there remains a straight cylindrical log from 90 to 120 feet in length. Concerning the quality of the timber, I can only furnish a few details which I have gathered from the natives and missionaries, and from my own observations. The wood of the Bombax, the largest and most common of the forest trees, is, I should think, of little commercial value, on account of its extreme softness. It is from this wood that the natives make their canoes.

The Odúm is a tree which reaches a height of fully 200 feet, with a diameter of 5 to 10 feet. It yields a wood similar to oak in texture and hardness, and varying in colour from a golden yellow to deep brown.

The Papáo is a somewhat smaller tree, yielding a wood almost indistinguishable from Spanish mahogany.

Báno is a tree similar in size to Papáo, and its wood is of the same character, but has the reputation of being more even in texture and easy to work.

Seseo is a somewhat small tree yielding a white and not very hard wood.

Chinacho is also a rather small tree, and yields a red, tough wood, which is used by the natives for making paddles.

Wawa is the tree from the wood of which the missionaries and more civilised natives make shingles for their roofs.

Nókocho is a tree of no great size but will yield logs up to 3 feet diameter. The alburnum is whitish, extremely hard, tough and heavy. It has a heart-wood very similar to ebony.

Yoicho is a tree producing an edible fruit and yielding an extremely tough wood. This tree has a very hard heart-wood.

A careful examination of the forest would no doubt reveal the presence of many other trees yielding valuable woods; and it may be confidently stated that before long a very remunerative timber trade will be established in West Africa.

With respect to rubber, I have little to add to what is already known. The vines (Landolphia) exist in the greatest profusion throughout the forest, and to the north of Kumassi I observed large tracts covered by a tall and slender tree which the natives assured me produced a marketable rubber.

In drawing attention to the commercial importance of the kola nut, it may be well to furnish a brief description of the plant and its fruit. This nut is the ripe seed of *Sterculia acuminata*, a tree about 40 to 50

feet in height. The seeds are so well known that no description is necessary, but it may be stated that they are of two kinds, the red or purple, and the white, which occur usually alternately in the same carpel.* The carpels vary in length from 2 to 4 inches, are light brown in colour, and contain from one to fifteen seeds, which are surrounded by a soft pericarp.

The tree commences to bear at its fourth or fifth year, but it does not reach maturity until its tenth year. The annual yield is from 120 to 200 lbs. in two crops which are gathered in May and June and in October and November.

The seeds consist largely of starch, and contain upwards of 2 per cent. of caffeine and some theobromine, upon the presence of which alkaloids they depend for their medicinal and dietetic value. It is to be observed that the amount of caffeine exceeds that contained in coffee, which they consequently exceed in stimulating properties.

The demand for kola in Europe is already large and increasing, and likely to increase to an almost unlimited extent. Prepared with sugar and vanilla, it forms the well-known "kola chocolate," which is coming into extensive use and has received much favourable notice from the medical profession. It is administered to invalids and convalescents, and is recommended for the use of travellers, to allay hunger and relieve exhaustion. Kola is also used in the manufacture of cocoa and chocolate to improve the quality of inferior cocoa. It is also used in medicine when the action of caffeine is required.

From these facts it is easy to see that kola has a brilliant commercial future, and in recognition of these facts, extensive plantations of it are being made in the West Indies. In June 1889, kola nuts realised in the London market 10½d. per lb. I find that the entire expenses of transport to Europe would be less than 3*l.* per ton, leaving a profit of 95*l.* per ton to the local grower and shipper.

But in addition to the European trade in this product, there is an almost unlimited demand for it in Africa, for every year caravans arrive from the great towns of the far interior for the express purpose of buying and conveying it to the Mahommedan countries where it is so highly valued, and where the tree cannot be grown. Even so near as Lagos, I am credibly informed that it is retailed to Mahommedans at the rate in many cases of 3d. for a single nut. When it is remembered that Ashánti and Akém are *par excellence* the home of the kola tree, it will be manifest that its cultivation in the forest of the Gold Coast would form a most natural and easily fostered industry.

The last vegetable product which I shall notice is Shea butter, an oily substance obtained from the seeds of *Bassia Parkii*. This tree is

* This is the description that is usually given, but in the specimens which I have seen *all* the seeds have been white when fresh, but have become purple on exposure to the air.

about the average size of an English pear-tree, it is remarkably slender in its proportions, and its leaves are arranged in a peculiar and very characteristic manner. The branches tend to divide trichotomously, and after several divisions, terminate abruptly in rounded club-like extremities, from which a number of long ligulate leaves with slender petioles take rise. The bark is rough, very dark brown, and deeply fissured. The seed is oval, 1½ to 2 inches in its longest diameter, 1 to 1½ in its least, albuminous, and contained in a hard test.

Shea butter is a white solid oil with a fresh vegetable odour and not disagreeable taste; it burns with a clear white flame and without giving rise to any unpleasant odour. Its melting-point must be very high, for it never melted although exposed to the sun at a time when the shade temperature was 98°.

It appears to remain good for an indefinite time, never becoming rancid nor losing its agreeable odour.

It is used for a variety of purposes in this part of Africa, including cooking, lighting, and medicine. It is an admirable substitute for lard; but I cannot endorse Mungo Park's statement, that eaten on bread it is superior in flavour to the finest cow butter, for a heroic attempt made by me to use it in this manner ended in ignominious failure.

As a commercial product it would be of great value for the manufacture of soap and candles, and its immunity from decomposition would render it useful as a basis for ointments. If the demand were considerable, an almost unlimited supply would be available, as miles of country are covered with the trees, to the almost complete exclusion of other species.

Both Jáman and Kong appear to be rich in gold, but I lay little stress upon this, as there are valuable gold districts near to the coast which have, as yet, been little worked.

The principal obstruction to commerce in any new country is the difficulty of transport, and this can only be overcome by a system of waterways or by the construction of railroads.

In neither of these respects does the tract of country above described present any remarkable difficulties; the British Protectorate is penetrated by several rivers of considerable size, one of which, the Volta, extends over 6° of latitude, and rises near the south water-parting of the Upper Niger valley.

It is true that some of these rivers have been explored by certain adventurous spirits, who, finding them totally unprovided with embankments, locks, and weirs, have pronounced them hopelessly unnavigable.

Nevertheless, I think that they will be found to present no greater obstacles to navigation than are met with in other countries where long periods of drought alternate with prolonged and heavy rains.

In a like manner, although opinions to the contrary have been advanced, I believe that there exist no obstacles to the construction

of railways which could not be readily overcome by a competent engineer.

From a review of the above-stated facts, and from a consideration of the great wealth of this country in natural productions; of the possession by it of a soil and climate which respond to the feeblest efforts of agriculture with the most lavish productiveness; and of the evidence afforded, by the small but flourishing plantations which already exist, of its suitability for the cultivation of coffee, cocoa, cotton, and many other valuable articles of trade; it will, I think, be manifest that the Gold Coast and its adjacent territories will, in the near future, assume a commercial importance in striking contrast to their present insignificance.

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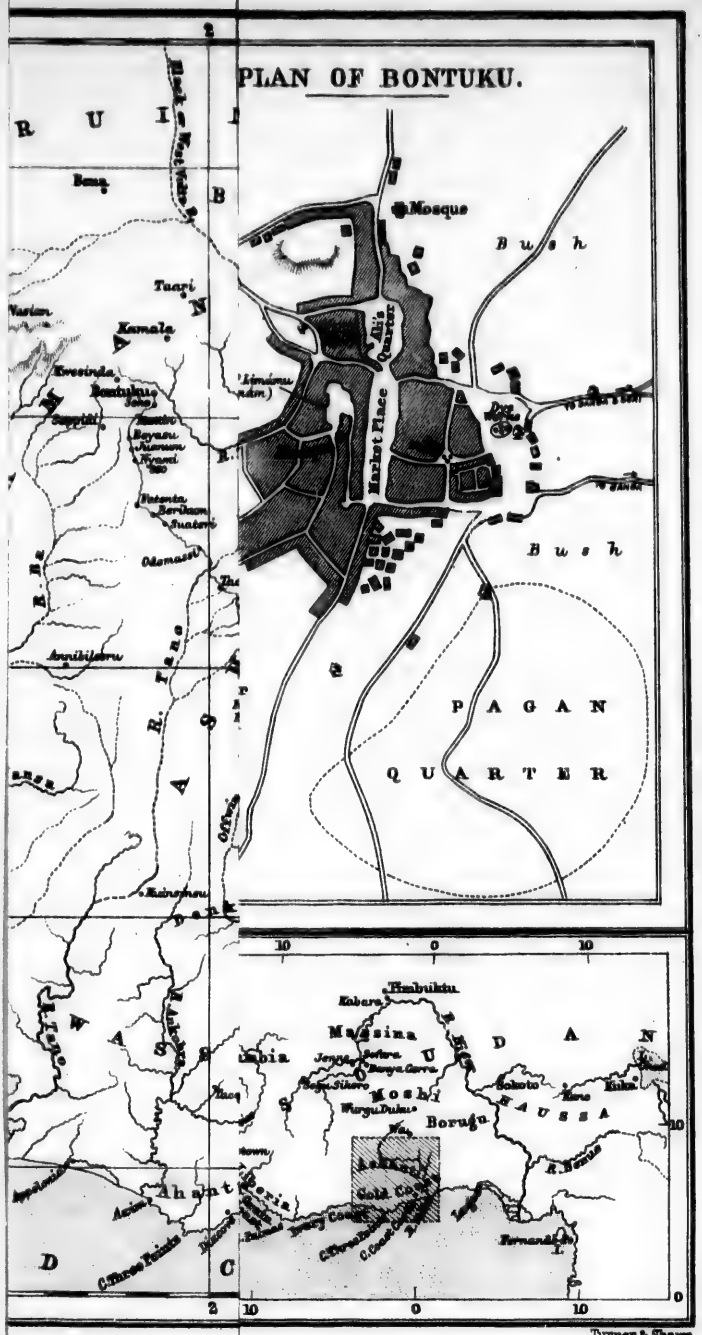
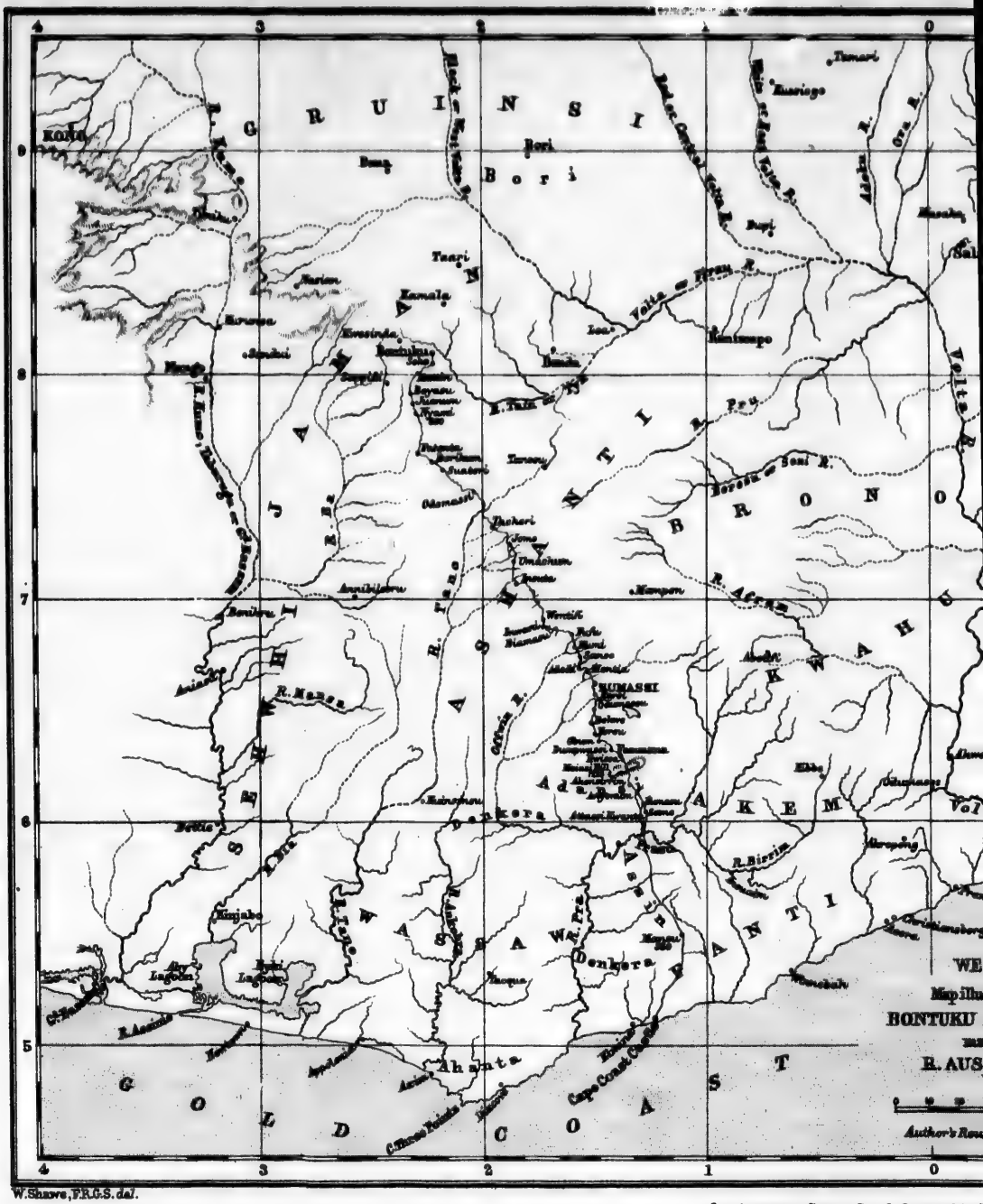
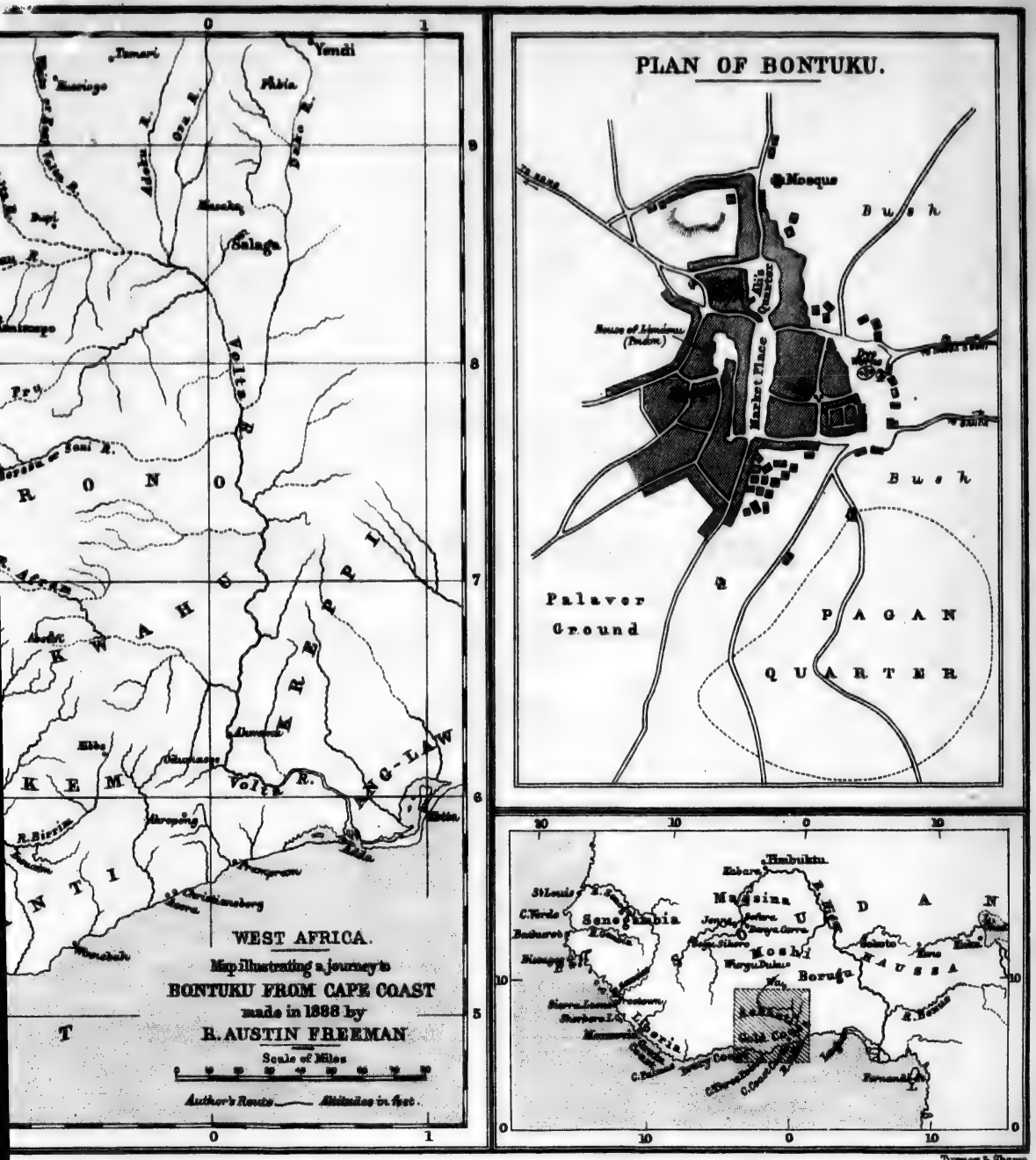




W. Shawe, F.R.G.S. del.

Supplementary Papers Royal Geographical


WEST AFRICA.
Map illustrating a journey to
BONTUKU FROM CAPE COAST
made in 1888 by
R. AUSTIN FREEMAN
Scale of Miles
Author's Route
Altitudes in feet.
PLAN OF BONTUKU.
Mosque
Bush
Market Place
Palaver Ground
PAGAN QUARTER
Bush
Yendi
Salaga
Volta R.
Tumari
Abia
Mankoa
Kwahu Plateau
Kemanti
Elmina
Cape Coast Castle
Tombuktu
Massina
Senegambia
Sierra Leone
Liberia
Gold Coast
Borgu
Hausa
Sokoto
Kano
Bornu
Wa
Fernando Po
St Louis
C. Verde
Bathurst
Bissau
Boma
Mozambique
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REVIEW

OF

BRITISH GEOGRAPHICAL WORK

DURING THE LAST HUNDRED YEARS.

1789-1889.

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REVIEW

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BRITISH GEOGRAPHICAL WORK

DURING THE LAST HUNDRED YEARS.

1789–1889.*

Early Work—General Sketch.

One hundred years ago those series of researches had already been commenced by British explorers and geographers, which have since been prosecuted with energy and success. Their geographical work has mainly, though far from exclusively, been directed to four great fields of discovery, namely, the Polar Regions, Australia, Central Asia, and Africa. This work may best be considered in two unequal periods, namely, in the forty years before, and in the sixty years after the foundation of the Royal Geographical Society.

Impulses had been given to geographical research, in all directions, some years before the commencement of the century under review. The polar expedition of Captain Phipps in 1773, had revived an interest in the Arctic Regions which had been almost dormant since the voyage of Baffin in 1616; while the voyage of Captain Cook had added largely to our knowledge of the ocean along the line of the Antarctic Circle. But the labours of Captain Cook had been productive of consequences of still greater importance. Captain Bligh was sent out to Tahiti in 1788, and after the famous mutiny of the *Bounty* in 1789, he made a running survey of the Banks group of islands, in an open boat. Vancouver, another of Cook's disciples, was employed from 1792 to 1795 in

* Compiled as the contribution for Britain to the series of National Reviews of Geographical Work, which the various countries were requested to send in to the International Geographical Congress on the occasion of their meeting in Paris in 1889. The basis of the review is a general sketch prepared, by request of the Council, by Mr. C. R. Markham, C.B., F.R.S.; this has been supplemented with a few additional details by Mr. J. Scott Keltie.

examining the great island which bears his name, and the adjacent coasts of North America. But by far the most momentous result of Captain Cook's voyages was the colonisation of Australia. In 1788 the first settlement was formed at Botany Bay, in New South Wales, and fifteen years afterwards, Captain Flinders commenced his explorations of the shores of Australia, while his comrade Bass discovered the insularity of Tasmania. In India, Major Rennell, the most illustrious geographer of his period, published his general map in 1788; this was followed by Herbert's first essay to explain the geography of the Himalayas; by Manning's visit to Lhasa in 1811; by Moorcroft's journey to the source of the Sutlej; and by the labours of Macdonald Kinneir and others in Persia and Baluchistan. Leake's journeys in Asia Minor in the first two years of the century deserve mention, as do Rich's, a few years later, in Kurdistan. Africa was a vast unknown continent a hundred years ago, the hypothetical names which crowded the old maps having been swept off by D'Anville, who left an almost complete blank. James Bruce, the great traveller, had returned from Abyssinia in 1774, and his narrative was published in 1790.

It will thus be seen that the work of geographical discovery, as regards the polar regions, Australia, Central Asia, and Africa, had been well commenced, when the century which is completed in 1889, first dawned upon the world. The more scientific labours of geodesists were commenced about the same time. The Ordnance Survey of Great Britain was begun in 1784, that of British India in 1802; while the marine surveys were inagurated by the appointment of the first hydrographer at the British Admiralty in 1795.

During the general war which prevailed from 1793 to 1815, there was necessarily less ardour in prosecuting geographical research; but at the same time even those years were not altogether barren of useful work, and there was renewed activity after the peace. It was in 1788 that a company of ardent geographers, led by Sir Joseph Banks, the President of the Royal Society, and by Major Rennell, the learned geographer and surveyor, formed an association for promoting discovery in Africa. At that time the interior of that vast continent was almost a blank. A few names of unexplored rivers and of uncertain nations were alone traced upon the map with hesitating hand, while the apocryphal "Mountains of the Moon" lay, like a long caterpillar, across its width. The African Association set zealously to work to dispel some of this darkness. In 1790 Major Rennell compiled a map of Africa from existing materials, and the Association sent out Major Houghton to reach the river Niger by way of the Gambia. He is believed to have perished on the road to Timbuktu; and as soon as the news of his death arrived, the services of a talented young Scotch surgeon, named Mungo Park, were engaged to succeed him. Park reached the Gambia in 1795, and re-

turned after two years, having made a most remarkable journey, reached the banks of the Niger, and collected information respecting its course. The geographical illustrations of the journey of Mungo Park were written by Major Rennell. In his second expedition Park was employed by the British Government, and he died in the midst of his work of exploration in 1805. Previous to this, Hornemann (1788–89) had penetrated to Murzuk, and Browne (1792–98) had done good work in Darfur and on the Upper Nile, while Salt's visit to Abyssinia in 1805 and 1809–10 added greatly to what had been learned of that country from Bruce's journeys. Jackson's great work on Morocco, published in 1809, the result of sixteen years' residence, is still an authority on that country, and is specially valuable for its scientific data.

Sir Joseph Banks died in 1820, and his place was taken, as the principal promoter of geographical discovery, by Sir John Barrow, the Secretary to the British Admiralty. It was due to Barrow that the Government sent an expedition to the river Congo in 1816, under the command of Captain Tuckey. The outbreak of fever which carried off this gallant officer, and most of his companions, prevented the success of the enterprise; but nothing was added to Tuckey's discoveries as regards the course of that great river, until it was descended by Stanley many years afterwards. From the Mediterranean, Lyon and Ritchie reached Mourzouk, while Denham and Clapperton made their memorable journey from Tripoli to Lake Chad and Sokatu. In a second expedition Clapperton, having thus completed a march across Africa, started from the Bight of Benin, reached Sokatu again from that side, and died there in April 1827. His companion, Richard Lander, completed his work, and determined the course of the Quorra or Niger. Major Laing reached Timbuktu in 1826. In 1820–27 Captain F. W. Owen made a survey of nearly the whole of the West and East Coasts of Africa, while, in 1821, much of the north coast was surveyed by the Beecheys. To the first period also belongs Dalzel's important contribution to a knowledge of Dahomey (1792), and Bowditch's journey in the Gabun (1817). John Barrow visited South Africa in 1797–98, while Burchell's travels (1810–14) by various routes into Bechuana-land are alike valuable for their results in geography, and in natural history and ethnology.

Among other names connected with explorations in South Africa at this period are those of John Campbell, Andrew Steedman, and Andrew Smith, who, with others, extended the limits of knowledge beyond Bechuana-land into Namaqualand on the west, and the Zulu country on the east

While encouraging the exploration of Africa, Sir John Barrow displayed still more zeal in promoting the cause of Arctic discovery. His own Chronological History of Arctic Exploration, published in 1818 and 1846, deserves to be reckoned among the English geographical

achievements of this century. In the same category should be placed Captain Burney's History of North-eastern Discovery. The voyage of Captain Phipps to Spitzbergen in 1773, had opened a new era in the history of polar exploration. In the previous century the expeditions to the north were undertaken in the hope of finding a profitable route to India and China. But no such motive actuated the Royal Society when Captain Phipps was instructed to cross the Arctic Circle. The object of his voyage was the attainment of valuable scientific results, and an increase to the sum of human knowledge. Although the idea of making the North-west Passage or reaching the North Pole has always had great attractions for enterprising young explorers, the real motives for despatching Arctic expeditions have been geographical discovery and the collection of information for the advancement of science. It was for these ends that two vessels under Captain Buchan were sent to Spitzbergen, and two more ships under Captain John Ross were despatched to Davis Strait in the year 1818. Ross may be said to have re-discovered the great bay which was first navigated by Baffin in 1616. His second in command, Lieut. Edward Parry, was convinced that a channel led westward from Baffin's Bay, and in 1819 this illustrious explorer received command of an expedition to discover a north-west passage. Parry, by reaching and wintering at Melville Island, traversed half the distance between the meridians of Davis and Behring's Straits, in the very high latitude of 74° N. In a second expedition he entered Hudson's Bay, and discovered the Hecla and Fury Strait; and in a third he explored a channel leading south from Barrow Strait, which he named Prince Regent's Inlet. The discoveries of Parry were supplemented by those of Beechey and Franklin. Entering the Polar Sea by Behring's Strait, Captain Beechey discovered the north coast of America as far as Cape Barrow. Franklin descended the Mackenzie river (explored at the end of the previous century by A. Mackenzie), and in a second expedition, from 1825 to 1827, he examined the coast of Arctic America, and ascertained its general conformation. The private expedition of John and James Ross, from 1829 to 1833, led to the discovery of the Gulf of Boothia, which is connected with Hudson's Bay by the Fury and Hecla Strait of Parry; while the same expedition is rendered for ever memorable by James Ross's discovery of the North Magnetic Pole. Scoresby's explorations in East Greenland and his contributions to a knowledge of the physical and natural history of the Arctic regions, are also worthy of mention. The first period of modern Arctic enterprise was fitly concluded by Parry's attempt, in 1827, to reach the North Pole on the meridian of Spitzbergen; when he advanced to a latitude of 82° 45′ N. This position continued to be the farthest north attained by civilised man for nearly forty years. In all these expeditions the interests of science received special attention, as may be seen in the appendices to the narratives. Special mention should be

made of the 'Fauna Borealis Americana' of Sir John Richardson, the work of several contributors, embodying the results obtained during Franklin's overland expedition.

During the same period, some interesting voyages were made in the direction of the South Pole. The South Shetland Islands were rediscovered in 1818, and the South Orkneys were discovered in 1821. In February 1823, Captain Weddell made a very remarkable voyage beyond the Antarctic Circle, reaching a latitude of 74° 15′ S.

During the period antecedent to the foundation of the Royal Geographical Society, the most distinguished geographers and promoters of discovery were Sir Joseph Banks, Major Rennell, who died 1830, and Sir John Barrow; while English cartography was chiefly represented by Aaron Arrowsmith and John Walker, the engraver of the Indian Atlas. Very important work was done through individual effort, and expeditions were also despatched by the Government; but the creation of a society which had the effect of concentrating and systematising these efforts, was the commencement of a new era in the history of British geographical research.

Foundation of the Royal Geographical Society.

In July 1830 the Royal Geographical Society of London was founded under the auspices of Sir John Barrow, Sir Roderick Murchison, and Admiral Smyth, with the objects of collecting and printing new and interesting facts and discoveries, of accumulating a collection of books and maps, of assisting travellers and explorers, and of publishing the results of their work. The Society came into existence at a time when there was considerable geographical activity, and when exploration was being conducted with success, in almost every part of the globe.

The Rosses were still engaged on their work, one of the results of which, as before stated, was the discovery of the North Magnetic Pole; and George Back was exploring the Great Fish river, in search of them. The Messrs. Enderby were despatching whaling vessels to the Antarctic seas with instructions to make discovery a prominent object of their voyages; instructions which led to the discovery of Graham Land and Enderby Land by Captain Biscoe. In Asia the work of Colonel Chesney in Mesopotamia, and of Ainsworth in Kurdistan, was in progress, while Sir Alexander Burnes was making his memorable journey from India to Persia, by the route of Kabul and Bokhara. Lander was determining the course of the Niger, and Sir James Alexander was making a difficult journey from Cape Town to Walfisch Bay. In South America Captain Fitz Roy was surveying the Straits of Magellan, and the coasts of Peru and Chili, Lieut. Smyth was descending the Amazon, and Sir Robert Schomburgk was exploring the interior of British Guiana. The Society put new life into these and kindred enterprises, and from the time of its

foundation the work of discovery was fostered and accelerated. The labours of explorers and geographical discoverers, since the foundation of the Royal Geographical Society nearly sixty years ago, will most easily be appreciated by passing the results of their work in review, with reference to each region, in the following order:—the Polar Regions, Asia, Africa, America, Australia, and the depths of the ocean, finally referring to the labours of students and cartographers. On this plan the first region for our consideration will be the far north.

Arctic Exploration.

The first efforts of the Geographical Society, as regards the Arctic Regions, were directed to the completion of our knowledge of the northern shores of America. Captain Back was sent to Hudson's Bay in 1836, in the *Terror*, to execute this difficult work; but the object of the expedition was frustrated, owing to the impossibility of penetrating the ice in Frozen Strait during that season. The contemplated discoveries were eventually achieved by land journeys conducted by employés of the Hudson's Bay Company. Thomas Simpson, in 1837, connected the work of Franklin with that of Beechey, and in 1839 he worked eastward along the North American coast, joining the work of Franklin with that of Back, at the mouth of the Great Fish river. Simpson also discovered the southern shore of King William Island, and built a cairn on a point of land which he named Cape Herschel. Some years afterwards Dr. Rae connected the gaps left between the discoveries of former explorers. Thus was the whole northern coast of America brought to our knowledge by the united efforts of Franklin, Beechey, Simpson, Back, and Rae.

With the expedition of Sir John Franklin in 1845, there commenced a series of explorations in the Arctic Regions which were continuous during the following ten years. The Franklin Expedition was fitted out by the Government, and was due to the representations of Sir John Barrow, the untiring friend of geographical research during forty years, who died the year after Franklin sailed. The object of Franklin and his companions was nominally the achievement of the North-west Passage, but really the advancement of geographical knowledge, and of scientific research generally. Franklin led the two ships *Erebus* and *Terror* up Baffin's Bay and Barrow's Straits in the footsteps of Parry, and during the first year he made one of the most remarkable Arctic voyages on record, by sailing up Wellington Channel to 77° N., circumnavigating Cornwallis Island, and returning to winter at Beechey Isle. Baffled in his attempt to force a way by this more northern route, Franklin resolved to press southward in the second season and to seek a passage along that coast of North America which he knew so well. But his ships were detained in the heavy ice off the north coast of King William Island, where the tides meet. It was impossible to extricate

them. The heroic Franklin died in June 1847. His brave companions lived on to perish in the same glorious cause, but not until some of them, by reaching Simpson's Cairn on Point Herschel, had discovered the North-west Passage.

The expeditions sent out in search of Sir John Franklin added materially to our knowledge of the Arctic archipelago lying to the north of the American continent. The cause of humanity was also the cause of science; and it is pleasant for Englishmen to look back upon the history of those search expeditions, especially as they can reflect that France and England were united in the good work. British Arctic officers are proud to remember that Bellot and de Braye were their colleagues in the arduous task of searching for their lost countrymen.

The first search expedition, under the command of Sir James Ross, was sent out in 1848, discovering and searching the western side of North Somerset. In 1850 an expedition, under Captain Austin, was sent up Barrow Strait from the east; and another, commanded by Captains Collinson and M'Clure, was despatched to the Pacific, to enter the searching ground from the west by way of Behring's Strait. Captain Austin's expedition explored a considerable extent of new coast-line while conducting the search for Franklin, and Sir Leopold M'Clintock, who served in it, then developed his improved system of Arctic sledge travelling. Captain Collinson succeeded in navigating his ship from Behring's Strait, along the northern coast of America, to within a short distance of the spot to where Franklin's ships were beset; while his colleague M'Clure made a still more remarkable voyage along the western side of Banks Island, where his ship was just able to find a passage between the ancient ice of an inclosed polar sea and the rocky coast. After three years M'Clure and his companions were obliged to abandon their ship, and, by crossing the ice and returning by the eastern route, they traversed a North-west Passage. The British Government sent another search expedition by the route of Baffin Bay, after the return of Captain Austin: during which M'Clintock's system of sledge travelling was more fully developed. M'Clintock himself marched over 1328 miles, discovering Prince Patrick Island and the western side of Melville Island, while Sherard Osborn and Richards explored the northern shores of Cornwallis and Bathurst Islands. Dr. Rae, while exploring in Repulse Bay, succeeded in obtaining through the Eskimo certain news of the fate of the expedition. Finally, when M'Clintock commanded the *Fox*, in 1857–59, and discovered the fate of Franklin by reaching the shores of King William Island, he also completed the discovery of some intervening coast-lines, and thus combined good geographical work with his humane mission.

The labours of these searching expeditions largely increased the knowledge of the Arctic regions. Not only was a vast extent of land and sea added to our maps, but light was thrown on the physical geography and hydrography of a considerable area previously unknown,

as well as on questions relating to the geology and the distribution of animal and vegetable life. Under the care of Sir John Richardson, Prof. Edward Forbes, and others, the scientific results of these expeditions were worked out in great detail. The scientific papers by the late Sir Edward Sabine—in natural history, ethnology, physics, extending over many years from 1818 downwards—are specially worthy of note. Equally important were the contributions to the natural history of the Arctic Regions contained in the various memoirs contributed to the Linnean, Royal, and other Societies by Sir J. D. Hooker.

After the return of M'Clintock in 1859, Arctic enterprise was allowed to be lost sight of during several years; but the Geographical Society never ceased to take an interest in the efforts of other nations, and to show an appreciation for useful work. The Society, however, did not countenance the mere desire to reach the pole or a high latitude; maintaining that the object of polar research was not a rivalry to attain the furthest northern point, but the acquisition of valuable scientific results. It was from this point of view that the Society, with the powerful assistance of Admiral Sherard Osborn, urged upon the Government the importance of Arctic exploration.

In consequence of these representations an expedition was fitted out, in 1875, to proceed up Smith Sound, at the head of Baffin's Bay, and endeavour to complete the examination of the polar regions in that direction. The expedition was commanded by Sir George Nares. This expedition was eminently successful. The ships succeeded in attaining a higher latitude than had ever previously been reached by any vessel; the crew of the *Alert* wintered further north than any human beings had ever been known to have wintered before, and Commander Albert H. Markham, in his sledge journeys, advanced as far as 83° 20′ N. The positions thus attained enabled the expedition to explore that portion of the previously unknown Arctic region which could be reached from the direction of Smith Sound, with most valuable scientific results. The volumes issued by the Royal and the Royal Geographical Societies in connection with this expedition are in themselves valuable summaries of the knowledge of these regions up to the departure of the expedition. Since the return of this expedition the important branch of geographical research, which embraces discovery within the polar area, has been abandoned to private enterprise. Captain Wiggins has crossed the Kara Sea many times in his efforts to open up a trade route to the rivers Ob and Yenesei. Englishmen have made yacht voyages to the Barents Sea; and the most eminent among these yachtsmen, Mr. Leigh Smith, has corrected the geography of Spitzbergen, and made important additions to our knowledge of the south coast of Franz-Josef Land. It is hoped that, after an interval of neglect, the geographical labours of Englishmen in the Arctic regions will be again renewed, and pushed forward to completion.

Antarctic Exploration.

Antarctic discovery, so far at least as the attainment of a very high latitude is concerned, is represented by a single important expedition, that of Sir James Ross. But the attempts of Weddell in 1822–24, and of Biscoe in 1830–32, succeeded in adding materially to our knowledge of this region. It was Captain Washington, the Secretary of the Royal Geographical Society, who initiated the idea of this memorable expedition, as was pointed out by M. d'Avezac, in his obituary of that distinguished officer. James Ross was selected for the command on account of his unrivalled Arctic experience and his scientific attainments, one great object of the expedition being the registry of magnetic observations. Ross crossed the Antarctic Circle on the [illegible]st of January, 1841, and in two short months he had made one of the greatest geographical discoveries of modern times, amid regions of perpetual ice. His ships came in sight of a range of high land which he named Victoria, with an active volcano, called Mount Erebus, rising to 12,400 feet above the sea. He also discovered a long and remarkable line of lofty ice cliffs, resting on the land and he penetrated as far as 78° 11′ S. In three following years Ross continued his researches in the Antarctic Ocean, took a series of magnetic observations, and made considerable additions to the previous knowledge of the South Shetland group of islands. Ross was accompanied by an able scientific staff. The zoology of the voyage was worked out by Richardson and Gray, while Sir Joseph Hooker's 'Botany of the Antarctic Voyage' (1841–46) covers a wide area. The *Challenger* expedition just crossed the Antarctic Circle, but added considerably to our knowledge of the forms assumed by Antarctic ice.

Asia.

The progress of the trigonometrical survey of British India, with its attendant topographical and revenue surveys, afforded remarkable facilities for advancing the work of discovery in the vast regions of Central Asia, by training for the purpose well-qualified native explorers. One great result of this survey itself has been the completion of a detailed map of British India on the basis of these surveys, and the collection of a vast amount of information on the geography of the country embodied in the reports of the various branches of the Survey. Much has also been done by the Geological Survey for the geography of India. The publication of Hunter's 'Gazetteer of India,' under Government auspices, must also be mentioned, containing, as it does, information collected by Government officials throughout the country. In addition to this there are the special gazetteers and monographs on many of the provinces and their subdivisions, which have been compiled by Government officials. Travellers of eminence were also produced by the Indian Navy, whose duties embraced the execution

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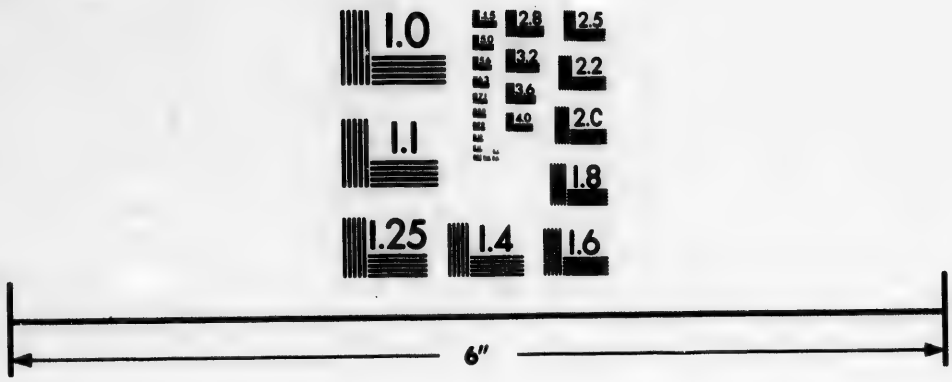

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of surveys along the Indian and adjacent coasts. During the century a host of British travellers traversed India in all directions, much of their work, as will be seen from the Bibliography, being contained in the publications of the Asiatic Society.

The labours of the trigonometrical survey in the Himalayas have a special interest for geographers, and resulted in the complete and accurate delineation of that mighty chain of mountains, with its colossal glaciers and lofty peaks. From 1848 to 1850 Sir Andrew Waugh, the Superintendent of the Surveys, fixed the height of seventy-nine of these peaks, the loftiest, named Mount Everest, being 29,002 feet above the sea. In 1855 the survey of Kashmir and of the mighty mass of mountains up to the Tibetan frontier was commenced by Colonel Montgomerie. It was a most arduous task, the height of the stations averaging 17,000 feet, while luminous signals were used from peaks 19,000 feet and even 20,000 feet above the sea. Mr. Johnson, one of Montgomerie's party, reached 22,000 feet, and took observations from many stations of over 20,000 feet, and marks were erected on peaks as high as 21,480 feet. One of the peaks of the Karakorum range, measured during this survey, was found to be 28,290 feet above the sea, the second highest in the world. It was Colonel Montgomerie who organised the plan of employing native explorers to make discoveries in Turkistan and Tibet and other parts of Central Asia, which has led to considerable gains for geographical knowledge, between the meridians of 66° and 102° east of Greenwich. Mr. Drew's long residence in Kashmir in an official capacity enabled him to collect a vast amount of information, which renders his work 'Jummoo and Kashmir' the great authority on the geography of the country.

The list of those British travellers who have crossed the Himalayan range to extend their researches into the interesting regions of inner Asia, which were long undefined by geographers, though well known to history, is a long one. Sir Alexander Burnes's residence in Cabul in 1836–38 was of special value from a commercial standpoint; more particularly the reports on Scinde, Afghanistan, and neighbouring countries by Burnes, Leech, Low, and Woods. The Afghan campaign of 1838–39 also furnished useful contributions to the geography of that country. After the journey of Sir Alexander Burnes, Lieut. Wood, of the Indian Navy, was employed to continue the exploration of the countries beyond the Hindu Kush. In February 1838, Wood reached the "Bam-i-Duniah" (Roof of the World), and discovered Lake Sirikol, the source of the river Oxus, 15,600 feet above the sea. Some years afterwards the officers serving in the first Afghan war collected materials for a detailed map of Afghanistan, and soon afterwards a succession of travellers began to push their way northward from Kashmir and Ladak.

Lieut. H. Strachey did much for the geography of the Himalayan frontier in the forties. Dr. Thomson was the first to reach the summit

of the Karakorum Pass in 1848, while General R. Strachey, in 1848–49, was employed in a scientific survey of the Himalayan province of Kumaon, and made valuable contributions to geography, the Himalayan conditions of snow and ice, geology, and botany. Sir Joseph Hooker traversed the valley of the Ganges and through Sikkim reached the higher Himalayas. The journey was rich in results in all directions, and may be said to have led to Sir Joseph's great work, the 'Flora Indica,' which is not yet completed. The researches of Godwin-Austen on the glaciers of the Mustagh region of the Himalayas and Lake Pangong must also be mentioned.

In 1868 the Karakorum range was first crossed by a British traveller. Mr. R. B. Shaw entered Eastern Turkistan in that year, at the same time as Mr. G. W. Hayward, the Royal Geographical Society's explorer, and reached the town of Yarkand. He made a number of astronomical observations which fixed the longitude of Yarkand, and supplied a basis for a general map of the country. Mr. Hayward, in 1870, carried his exploration up the Gilgit Valley, on his way to the Pamir, but met with his death at the hands of assassins at the foot of the Darkot Pass. Mr. Shaw's journey was followed by the mission of Sir Douglas Forsyth in 1873 to Yarkand and Kashgar, when a junction was established between the Russian and English surveys; and the southern part of the Pamir table-land was explored. The scientific results of the mission are of great value, and have been worked out by several specialists. In the year that Forsyth's mission returned from Eastern Turkistan, the labours of many English travellers in Persia, including Kinneir, Rawlinson, and Goldsmid, were utilised by the completion of Colonel St. John's map of Persia in six sheets—1874. This was followed by the matured results of Forsyth's mission to Kashgaria, including the surveys of Colonel Henry Trotter. This able geographer made excursions from Kashgar as far as the Artysh district, and over the Pamir steppe into Wakhan, visiting Lake Sirikul, the source of the Oxus discovered by Wood. It was Trotter, also, who connected the English surveys with those of Russia: and his researches threw a flood of light on the geography of the Pamir and Eastern Turkistan.

The work done in Persia, Afghanistan, Baluchistan, and neighbouring regions by Englishmen since 1840, deserves further detailed mention. It has been extensive and important, as will be seen from the appended Bibliography. One name associated with this region for half a century is that of Sir Henry Rawlinson, already alluded to in connection with Jones's journeys in Asia Minor. Rawlinson first went to Persia on an official mission in 1833, and during five years visited various portions of the Persian empire, accumulating stores of geographical and archæological information; an account of one of the journeys appeared in the 'Journal of the Royal Geographical Society' in 1840, a journey from

Tabriz through Persia, Kurdistan, and the ruins of Takhti-Soleïman, and thence to Ghilan, accompanied by a memoir on the site of the Atropatenian Ecbatana. Sir Henry's researches in connection with the decipherment of the cuneiform inscriptions, and with their bearings on ancient geography as well as history, are well known, and the results will be found in the publications of the Royal Asiatic Society as well as the Royal Geographical Society. In 1843 he was appointed British resident at Bagdad and continued with marked success the work of decipherment, visiting in 1847, Behistun for the third time. In the following year he carried out subterranean researches in laying bare the ancient topography of Babylonia. Many other contributions both to the history, archæology, and geography of the region in question, have been made by Sir Henry, mostly appearing in the publications of the Asiatic and Royal Geographical Societies, or embodied in the great edition of Herodotus, by his brother, Professor Rawlinson, and also in his own volume mentioned in the Bibliography.

To the many travellers who have visited the Iranian regions during the last half century, only brief allusion can be made. Masson's extensive journeys through Afghanistan and Beluchistan were made rather before this time, but deserve special mention on account of the fulness and value of the information which he collected. W. Griffiths, who accompanied the Afghan expedition of 1838–39, made valuable observations in botany as well as physical geography. In 1840, J. Abbot's journey from Herat through the desert to Khiva yielded fresh and valuable results. Stoddart and Conolly's journey through Persia and Bokhara in 1842-43, can only be mentioned to refer to the sad fate of the travellers. Conolly had already done good work in his journey through Persia and Afghanistan to India, while Wolf's mission to inquire into the fate of the Englishmen added something to our knowledge of Central Asia. Lieut. Selby's ascent of the Karun and Dizful rivers to Shiraz, in 1842, remained for forty years almost our only source of information on this important district. In 1881, Captain Wells materially supplemented the information obtained by Selby by his venturesome surveying tours in Southern Persia, gathering not only much topographical information, but collecting information of great service for the commercial development of the country. Several years before this, 1875 and 1878, Mr. G. S. Mackenzie, by his journeys in South-west Persia and his navigation of the Karun, collected much valuable information on the various trade routes of that region, where, indeed, he had been journeying as far back as 1866. The mission to Afghanistan of 1857–58, under Major Lumsden, produced geographical and cartographical as well as scientific results of much importance; while the special observations of H. W. Bellew lent it additional value. Even more important were the labours of the Persian Boundary Commission, 1870–72, the members of which explored especially Eastern Persia (Mekran, Seistan

and Khorassan), but also crossed the country in various directions under Sir F. Goldsmid. The geographical observations were looked after by St. John, Lovett, and Euan Smith, while contributions of the first importance to the zoology and geology of the country were made by W. T. Blanford. The result was St. John's six-sheet map of Persia.

At the same time (1872), Sir F. Pollock was sent on a mission to Seistan, in which he was accompanied by Mr. Bellew, who again made important contributions to a more thorough knowledge of Baluchistan, Afghanistan, and Persia.

At various times between 1861 and 1872, Sir F. Goldsmid had travelled not only throughout Persia but in neighbouring countries in connection with the Indo-European telegraphs, and the results of his observations are of value, among other things, in their bearings on the economic development of these countries. Associated with Sir F. Goldsmid was Bateman Champain, whose wide personal acquaintance with Persia enabled him to make valuable contributions to a knowledge of its trade routes. The name of Houtum-Schindler, an Englishman in charge of the Persian telegraphs for many years, should also be mentioned for the many important contributions he has made to the topography of Persia, during his numerous official journeys all over the country.

Valentine Baker and Gill's journeys in Northern Persia, especially Khorassan, in 1873, added something to our knowledge of the geography of that region. In 1874, the Hon. G. Napier's journeys in North Khorassan, Mazanderan, and Irak produced not only new topographical results but valuable additions to our knowledge of the geology, physical geography, archæology, the tribes and deserts of that part of Persia.

Sir Charles Macgregor began his journeys in Persia in 1875. Our knowledge of Khorassan was still very meagre. He travelled right across Persia, passing through Shiraz, Yezd, and Birjand to the Afghan border, and for many years he was the chief authority on this part of Persia. In 1877, he and Captain Lockwood explored the uninviting waste between the sea-coast and the Helmand in Afghanistan. They crossed the Baluchistan desert to Zirreh, Macgregor passing through the Brahui country to Sohrab and the Mula Pass, and Lockwood through Chazeh, Nashki, and Mastang. One important service Sir Charles rendered to the geography of Central Asia by superintending the compilation of the Gazetteer of Central Asia, Afghanistan, and other countries beyond the frontier of India which goes by his name, and which has been continued by other hands.

In 1875, Floyer travelled through the almost unknown region of Bashakand in Western Baluchistan, making valuable notes on the country and people; and by Kerman, Yezd, Ispahan, and Bagdad, reached Europe.

In 1876, Butler traversed the Atrek, and in 1878 the Afghan war broke out, the military contingent being accompanied by several officers

whose surveys, though rapid, enabled them to make important additions and corrections in the map of Afghanistan. Bevan surveyed the Bolan-Quetta-Kandahar-Girishk district; Rogers between Quetta, Kandahar, and Kelat-i-Ghilzai; Heaviside and Holdich the important route from the Indus through Southern Afghanistan to Pishin; while Gore mapped the country and its mountainous girdle to the north of Quetta. The Kuram Valley column was accompanied by Woodthorpe and other survey officers, the Peshawar column by Tanner and his colleagues. Thus a very thorough knowledge of the topography of this country was obtained. This led ultimately to the Afghan Boundary Commission, under Sir West Ridgway and Sir Peter Lumsden. Not only were important additions made to our knowledge of the geography of Afghanistan and the boundary between that and Russian Asia, but as the Commission was accompanied by competent scientific specialists like Griesbach the geologist and Atchison the botanist, a rich harvest for science was obtained, a fairly satisfactory knowledge of the physical geography and biology of the country.

In 1880, Colonel C. E. Stewart made an adventurous journey through the heart of Khorassan as far as Meshed, north to the Turkoman frontier and south-west to Ispahan, during which he collected important information on the topography of the country as well as on its resources and population. Shortly after Colonel Stewart returned to the same region, journeying by the Herat valley and the Persian border, from the Hari-rud to Seistan, and making important additions to the map of the country south of 34° north.

Raverty's important contributions to a knowledge of routes in Afghanistan and Beluchistan, partly from his own observation, and also from information collected from all sources, deserve special mention.

In Cyprus, not to refer specifically to earlier journeys dealt with in the works mentioned below, we may mention Mr. J. Thomson's journey through the interior in 1878 (resulting in many valuable photographs), Sir Samuel and Lady Baker's journey in 1879, Hamilton Lang's work on the island, and the official surveys made since the English occupation and embodied in Colonel Kitchener's map.

In 1885, Mr. A. D. Carey made a journey round Chinese Turkistan, which, after an independence of some years, had again come under the rule of Peking since the visit of Sir Douglas Forsyth, and along the northern frontier of Tibet; and in the following year Colonel Mark Bell, and after him Lieutenant (now Captain) Younghusband made journeys from Peking, across Central Asia, to Kashmir.

In China much geographical work has been done by British explorers. In 1862 Captain Blakiston surveyed the Yang-tsze-kiang for 900 miles beyond the farthest point previously reached by Englishmen. Mr. Ney Elias, in 1868, surveyed the new course of the Yellow river; and in 1872 the same accomplished traveller made a remarkable journey through Western Mongolia and South-eastern Siberia, by Uliassutai and Kobdo,

during which he took a large series of observations for fixing positions. In 1877 Captain W. J. Gill made his way overland from Hankow on the Yang-tsze-kiang to Bathang on the borders of Tibet, and thence, by Talifu, to Bhamo on the Irawadi, making a traverse survey and a map of his route. Still more extensive studies of the geography of China were made by Mr. E. Colborne Baber, who undertook several important journeys between 1876 and 1880, particularly in the provinces of Yun-nan and Se-chuen. Among other services to science Mr. Baber brought to our knowledge the little-known people called Lolos, bringing back specimens of their books, written in a character hitherto undeciphered. He also made many corrections of the Jesuit surveys executed in the time of the Emperor Kang-Hi, which have been the basis of all maps of China for more than a century and a half.

In Western Asia, survey work of great interest and accuracy was carried out in Palestine and the Sinai Peninsula during 1864 and following years. Long before this, however, much good work was done by English travellers in Western Asia. Lieut. Wellsted, in 1829–35, besides exploring the Sinai Peninsula and surveying the Arabian as well as the Nubian coast of the Red Sea, made an extensive journey through Omân, his narrative, abounding with scientific observations, being still regarded as an authority on that part of Arabia. The Euphrates Expedition (1835–37) under the command of Colonel Chesney, was fruitful in results in many directions. Chesney himself, before this, in 1830, had travelled through Asia Minor and Egypt, in order to solve the problem of direct steamship communication with India. He also passed through the Red Sea and established the possibility of a twenty-one days' journey from Suez to Bombay. At the same time (Oct. 1830) he sent a report to the Foreign Office advocating the construction of a canal on the line now occupied by the Suez Canal of Lesseps. He crossed the Arabian Desert and Palestine, reached the Euphrates at Ana, and navigated the river down to the Persian Gulf (January 1831) on a raft constructed by himself, on which he reported to the Government on his return in 1833. Then followed the famous Euphrates Expedition, at the expense of the Government, one of the most interesting expeditions that ever left the British shores. Its objects were the establishment of steam communication with India, and its route lay through almost unexplored countries. The expedition was directed by scientific officers, and well supplied with instruments. The results were of wide and high importance, both from the practical and scientific point of view. Materials for a correct map of a very large portion of Northern Syria were collected; a line of levels was carried across from the Mediterranean to the Euphrates; Northern Mesopotamia was explored, and the survey of the river carried out to its embouchure in the Persian Gulf. At a subsequent period two different ascents were made of the Karun river and two descents of the Bahameshir, while the country intervening between the Jerahi and the Euphrates, the Great

Delta of Susiana, was examined. Twice was the Tigris ascended to upwards of 400 miles beyond its junction with the Euphrates; a second line of levels carried between the Euphrates and the Tigris, new positions obtained by the journey across the desert, and a geological section of the Taurus, of several hundred miles in extent, obtained. A new country was thus opened to navigation, commerce, and civilisation, and the practicability of the route for steam navigation established. The results, as embodied in Chesney's voluminous narrative and atlas, deal not only with the immediate observations of the expedition but with the work of others in the same region, which is treated in minute detail and in all its aspects. In the exploration of this interesting region since 1840, England has taken an important part; especially so with respect to ancient sites of Babylon and Nineveh, and other great cities of antiquity, the topography of which, the architecture, the inscriptions, and the monuments, have been worked out in great detail by such men as Rawlinson, Layard, Loftus, George Smith. Further north, J. Bryce has described Ararat and Armenia, and in the Caucasus good work has been done by Freshfield, Grove, Telfer, and Dent in revealing the extent and character of the glaciation of that mighty range.

Besides the reports of Chesney himself, Mr. W. F. Ainsworth, the surgeon and geologist of the expedition, published his special researches on the antiquities of Assyria, Babylonia, and Chaldæa, and the antiquities and geology of Asia Minor, Pontus, and Armenia were described by W. J. Hamilton.

This may be said to have led to the expedition under Ainsworth and Rassam in 1839–40, at the joint expense of the Royal Geographical Society and the Society for Promoting Christian Knowledge. From Skutari the party traversed Asia Minor in a south-east direction to the Persian frontier, their route being most circuitous, covering thousands of miles, in many parts over a country then but little known, and to the topography and geology of which the expedition made important contributions.

Beke and Moore travelled in Palestine in 1837, and definitely established the low level of the Dead Sea as compared with the Mediterranean. Beke returned to Syria in 1861 with his wife, and by Hauran over Mount Gilead, entered Palestine. Once more, in 1873-4, he journeyed to the East, to Egypt and the Red Sea, where he visited the Peninsula of Sinai, and as the result of his researches sought to prove that the Jebel el Barghir or Jebel en Nur is the true Sinai. These journeys, like his visit to Abyssinia, originated many researches and discussions by Beke of great value to scientific geography.

In 1837-44, Sir Charles Fellows made several journeys in Asia Minor, mainly for antiquarian researches, during which he did much to clear up the ancient geography, especially of the western peninsula of Asia

Minor. Along the course of the Xanthus he discovered the ancient cities of Xanthus, Ilios, and other sites, and brought to England a rich harvest of archæological remains.

In 1879 *et seq.*, Tozer and Crowder traversed a considerable area of Northern Asia Minor, from Samsoon, south and east to Lake Van, and northward to Trebizonde, the information on the Lake Van region being especially valuable.

In 1879, Sir Charles Wilson was appointed Consul-General in Asia Minor, and with the aid of his colleagues brought back much information concerning a country even then imperfectly known. The geographical results were, briefly, a complete military survey of the Taurus range from the mountains of Lycia to the Persian frontier; of the Anti-Taurus; and of the Giaour Dagh to Mount Amanus, from the Taurus to the Beilan Pass. Surveys were also made of the Cilician Plain; of the country round Mount Argæus; of portions of Paphlagonia and Pontus; and every important road in the country was examined and sketched.

In 1883 *et seq.*, Prof. W. M. Ramsay has been carrying out a careful exploration of Asia Minor, his chief aim being to identify ancient sites and roads, and especially in Phrygia and the border districts of Pamphylia, Pisidia, Lydia, and Galatia, he has been able to do more for the ancient geography of the country than any previous explorer.

Since 1840, besides special surveys of the coast referred to below, there are several important journeys by Englishmen in Arabia to record. First of all there must be mentioned Richard Burton's daring visit to Mecca and Medinah in 1853, by which he was able to give to the world so much valuable and new information concerning these cities and the pilgrims that flocked to them. In 1862–63, Gifford Palgrave made his famous journey through Arabia, from Damascus by Gaza, through Nejd, by Djuf, Haïl, Riad, the capital of the Wahabites, to the Persian Gulf, by the Bahrein Islands to Maskar, up the Tigris to Bagdad. Palgrave's work still remains the only authority on much of the region which he traversed. Colonel (now Sir) Lewis Pelly's journey to the Wahabee capital, 1864, added to the information obtained by Palgrave; while Captain Miles's journeys in Hadramaut in 1870 and to Oman in 1876, and along the south coast in 1881, and General Miles's journey through the mountains of south-western Arabia in 1886 (?), extended our knowledge in these directions. Mr. Doughty's many years' sojourn and journeys in north-eastern Arabia and in Nejd (1876 *et seq.*), as far east as Hodeida and south to Mecca, were fruitful in valuable additions, not only to geography, but to ethnology, archæology, geology, and natural history. Burton's two visits to north-western Arabia, the ancient land of Midian (1877–78), resulted in a very thorough study of the topography of that region, as well as of its geology and archæology. Lady Anne Blunt and her husband in 1877–79 travelled over the Euphrates Valley and down to north-west Arabia as far as Haïl, going and returning by different

routes, north-west and north-east, living with the natives, and gathering much valuable and fresh information concerning both country and people.

The Palestine Exploration Fund was founded in 1865. During the quarter of a century which it has been at work not only has the Society made a complete topographical survey of the whole of Western Palestine, but nearly all of the important centres and ancient sites have been explored and investigated; and with this the names of Wilson, Warren, Conder, Kitchener, Tyrwhitt Drake, and others are intimately associated. The botany and zoology have been worked out under the care of such men as Hooker and Tristram, cartography by Trelawney Saunders, while a fair sketch of the geology has been made by Hull. In many other special directions has the Society sought to perfect the knowledge of Palestine, and not the least important of their productions is the beautiful and accurate map in six sheets. What their special lines have been may be learned from the Bibliography appended to this section.

A valuable coadjutor to this Society has been the Society of Biblical Archæology, which has done much to clear up the ancient geography of the country.

Of individual researches in this region there have been many, most of which will be found recorded in the Bibliography. Here we need only refer to Layard's journeys through Syria in 1839 *et seq.*, the results of which have only been recently published; Churchill's long residence in Mount Lebanon, 1842–52; Allen's survey of the Dead Sea, 1849 *et seq.*, with the view of a new route to India; Walpole's travels through Syria, 1850–51; Poole's journey, 1855, during which he made numerous careful observations; Porter's important researches during his five years' stay, 1849 *et seq.*, in Damascus.

In 1867, the Ordnance Survey of Sinai rendered complete our knowledge of this interesting peninsula, with its large scale maps, memoir, and photographs. In connection with this, Palmer's observations on the Desert of the Exodus added greatly to the archæological value of the survey. Burton and Tyrwhitt Drake's explorations in Syria in 1872 are a valuable supplement to the work of the Palestine explorations, as also Lady Burton's contributions to a knowledge of the domestic life of the country. Beke's careful exploration of the Sinai Peninsula in 1874, whatever may be thought of the author's theories, added much to accurate geographical knowledge. Lawrence Oliphant's journey to Palestine in 1879, crossing much of the Lebanon district, and extending southwards to the Dead Sea on both sides of the Jordan, contributed much to a knowledge of the economical condition of the country and its population. His more recent stay at Haifa enabled him to add still further to our knowledge of the Lebanon and of Northern Palestine. Captain Colville's double crossing of the Sinaitic Peninsula in 1883 deserves mention; in the same year Hull explored its geology. The researches of Ferguson, Wright, and others must be mentioned as in

various directions valuable supplementary contributions to the work of the Palestine Exploration Fund.

Some further work done in Western Asia by British travellers may be referred to:—

One of the earliest travellers in Western Asia during the period under review was Colonel Leake, already referred to, who, in 1800-2, traversed a considerable portion of Asia Minor, and whose map, compiled from his own and other observations, was the best of its time. In 1802, we find Scott Waring visiting Persia from India, and making an important contribution to the geography and history of that country. In 1808, C. J. Rich settled as British resident at Bagdad, and till his death in 1821 travelled extensively in the region around and in Kurdistan, making archæological collections, and collecting much geographical and statistical information. He visited Babylon, Nineveh, and Persepolis. His description of these places and of the country traversed by him were at the time fresh and solid additions to knowledge. Another important mission to Persia, in 1807–11, was that of Sir H. J. Brydges.

In 1808–16, Morier's two journeys through Persia, Armenia, and Asia Minor were fruitful in geographical and antiquarian information, while the maps by Rennell and others were of special value. Morier accompanied Gore Ouseley's mission to Persia, another valuable result of which was Sir William Ouseley's detailed narrative of his observations on the geography and archæology of the countries visited, as well as investigations into history and literature. Another important contribution to the antiquities of Persia was made by William Price, also a member of the mission. In 1811–12, Captain Beaufort's survey of the south coast of Asia Minor in these years deserves mention. In 1808–9 took place Mountstuart Elphinstone's important mission to Cabul, on which he was accompanied by a number of specialists, all of whom made careful observations during their stay in the country, which renders Elphinstone's work still an authority on Afghanistan.

Another Indian officer, who visited Beluchistan and Scinde in 1810, made large contributions to the geography of these little-known countries, and also embodied the results of his own and other observations in an elaborate map.

The journey of Captain J. M. Kinneir through Asia Minor, Armenia, and Kurdistan, in 1813–14, as far as Ispahan and Shiraz, resulted in valuable contributions to the historical geography of the region, and in an excellent map and memoir dealing with Persia.

In 1821 *et seq.*, James Baillie Fraser travelled extensively in Persia, in parts not usually visited, making observations not only on geography and people, but on the commercial resources of the country. The same traveller returned to Persia twelve years later (1833), and made still further additions to the existing knowledge of that country. In 1826, Sir J. E. Alexander accompanied an embassy to Persia, and published the

results of his observations. Hoskyns's survey, in 1840–41, of the south coast of Asia Minor, and his journey into the interior of Lycia must be mentioned. In 1842, the journeys of Spratt, Edward Forbes, and Daniell in Lycia, Milyas, and the Cebyratis were specially notable for the contributions made to the geology and natural history of the region. Spratt's map is still recognised as a first authority. In 1844, Commander J. Felix Jones began, in company with Major (now Sir) Henry Rawlinson (whose researches are referred to later on), his journeys in Asia Minor, making numerous surveys, especially in Assyria and Babylonia; in 1850 he traced the old bed of the Tigris; in 1857 surveyed the Shat-el-Arab, producing several excellent maps of the regions surveyed.

F. Walpole's travels in 1850–51 deserve mention, owing to his visit to the almost unknown country of the Ansagrii.

The many journeys of C. T. Newton, 1851–59, in Asia Minor are of special interest from the archæological point of view, as are also Pullen's in the same region in 1861. Rev. J. Davis's journeys in Anatolia, Cilicia, Isauria, and neighbouring regions, in 1872–75, added considerably to our knowledge of these rarely visited regions.

British exploration in the interior of Asia has been supplemented by the surveys which were conducted by officers of the Indian Navy, whose numerous memoirs describe the physical geography of all the coasts from Suez to Singapore, and whose admirable charts are of cosmopolitan value. The marine surveys of China have been executed by the British Royal Navy.

English travellers have also at various times done good work in Siberia.

On the historical geography of Asia generally, one of the most important contributions was the edition of 'Marco Polo,' by the late Sir Henry Yule, whose 'Narrative of a Mission to the Court of Ava' is still a classical work on Burma. In the publications of the Asiatic Society and the Royal Geographical Society, Yule also made many valuable contributions to the historical geography of Asia.

Africa.

Turning from Asia to the dark continent, it will be found that English travellers have been very actively at work in the interior of Africa since the foundation of the Geographical Society. Sir Roderick Murchison was the powerful and untiring promoter of discovery in Africa throughout a long and useful official life. While travellers received encouragement, assistance, and friendship from the President of the Royal Geographical Society, the great geologist also digested their information, and drew general conclusions from it, in his admirable Anniversary Addresses. It is to Sir Roderick's fostering care that the world owes many of the results of British exploration in Africa between the years 1840 and 1870, while to the same great man are due the lucid

generalisations and able comments which had the effect of arranging and classifying those results as harmonious parts of the science of geography.

To the thirties, however, belong the expeditions of Lieut. Washington and John Davidson in Morocco; Sir James Alexander's expedition into Damara-land, and Hume's into the Bamangwato country; and James Hamilton's journey from Suakin to Khartum.

One of the first important journeys in the interior of Africa, after the foundation of the Royal Geographical Society, was undertaken by Dr. Beke, the learned Biblical scholar. In 1840 Beke made his first journey into Abyssinia, exploring the kingdom of Shoa and the province of Godjam, and visiting the source of the Abai, Bruce's famous fountain of the Nile. He fixed by astronomical observations the latitude of seventy stations, mapped over 70,000 square miles of country, and his journey resulted in his first making known the true physical structure of Abyssinia, and of Eastern Africa generally. He was also one of the first to show that the principal mountain chain of Africa extended north and south on the eastern side of that continent, and that the Mountains of the Moon of Ptolemy are merely a portion of this meridional chain. In 1860 Dr. Beke published a work on the sources of the Nile.

Our knowledge of Abyssinia was greatly increased by the journeys of Mansfield Parkyns (1843–46), and still more by Chichele Plowden, who journeyed up the Nile to Abyssinia, where he resided for many years (1843–60) as consul. The invasion of Abyssinia in 1867–68 by an English army, accompanied as it was by several scientific specialists —Blanford, Markham, and others—resulted in large contributions to our knowledge of the country in its varied aspects. Major De Cosson's journey in 1873, as far as Lake Tzana, is worth mentioning, as well as the official report of Admiral Hewett's mission in 1883 and Mr. Portal's in 1887.

John Petherick was in Africa in 1846, when he travelled from Keneh to Kosseir. In 1853 and afterwards he traversed the Bahr el Ghazal into the country of the Djur, in 1858 getting as far as the Mani-Mani country. In 1861–63, when he undertook to meet Speke and Grant at Gondokoro, he with two naturalists, Murie and Browell, traversed a great stretch of country west of the White Nile into the Djur and Niam-Niam countries, reaching Gondokoro in February 1863.

In 1845, James Richardson undertook a journey from Tripoli to the Sahara, proceeding to Ghadames, was the first European to enter Ghat, and after traversing Fezzan, returned to Tripoli, 1850. The same traveller took command of an expedition into the Central Soudan, his companions being Barth and Overweg. Richardson, after accomplishing much good work, died in March 1851, at Ungurut, six days' journey from Kuka. The expedition, which was essentially an English one, was continued, with abundant results to science and geography, under Dr. Barth. The Central Sudan States, the Lake Chad, the Shari, Binue, Niger, and the region watered by them, were explored during four years,

and Timbuktu itself was visited. Dr. Barth's work, first published in England, is a vast store of information both on the geography and on the scientific aspects of the unknown region covered by his expedition.

In 1850 Mr. Francis Galton fitted out an expedition, at his own expense, to explore the interior of South Africa. He travelled through the country of the Damara and the Ovampo, in a journey covering upwards of 2000 miles, and it was his merit that he constantly observed for latitude and longitude. His companion, Mr. Andersson, extended his wanderings to Lake Ngami, and afterwards to the Okovango and Cunene rivers. That lake had been reached from the south, in August 1849, by David Livingstone, in one of the earliest journeys of that illustrious traveller. In 1876, the region visited by Mr. Galton, as also Namaqua-land, were explored by Mr. Coates Palgrave, who was sent on an official mission by the Cape Government. In 1861-62, Baines and Chapman from Walfish Bay travelled to Lake Ngami, and onwards to the Victoria Falls of the Zambezi, Chapman returning to Walfish Bay. In 1872-74, Lieut. Grandy, in his Livingstone Search expedition, penetrated from Loanda as far as Tungwa.

David Livingstone went out to South Africa as a missionary in 1840 and he settled at Kolobeng, in the far interior, in 1847. His first important journey was to Lake Ngami in company with Oswell and Murray. In his second he reached the Zambezi river, and on his return he proceeded to Cape Town and received instruction from Sir Thomas Maclear, the Astronomer Royal of Cape Colony, to enable him to fix positions scientifically. After a course of study at Cape Town, he set out on his most important and famous expedition, reaching Linyante, the capital of the Makololo, in May 1853, and the Portuguese settlement of São Paulo de Loanda in May 1854. From Loanda Livingstone determined to march across the continent of Africa, along the line of the Zambezi, accompanied by his faithful Makololo followers. Then it was that he discovered those glorious Victoria Falls of the Zambezi, more splendid even than Niagara, which no eye of civilised man had ever beheld before. Having marched across the continent, Livingstone reached Quilimane in May 1856, and returned to England to receive that enthusiastic welcome which he had so well earned. He was appointed Consul for the Interior of Africa, and the Government placed at his disposal those means and materials which formed the Zambezi expedition. In March 1858, Livingstone again started for the Zambezi, accompanied by Dr. (now Sir John) Kirk and other coadjutors. During this expedition the great explorer traced the course of the river Shire, and in September 1860 he discovered the beautiful Lake Nyassa, and the smaller Lake Shirwa. Livingstone returned to England in 1864.

The Livingstone Zambezi expedition, 1858-64, was the forerunner of much work by English travellers and missionaries in this direction. The work of the expedition included the exploration of the mouths of the Zambezi, and of the Rovuma river, as well as a careful survey of

much of the main river and of Lake Nyassa and the region around. The work of Livingstone's successors in this region is mostly recorded in the publications of the Missionary Societies, and the 'Proceedings' R.G.S. The construction of the road between Lakes Nyassa and Tanganyika, by Dr. Stewart, deserves mention, the journeys of Mr. H. O'Neill from Mozambique to the country west of Lake Nyassa,—during which he filled in many important topographical details; Mr. Last's exploration of the Namulli Hills in 1886; Mr. Joseph Thomson's exploration of the Lujende tributary of the Rovuma in 1881; and in the same year the Rev. Chauncy Maples' expedition to the south of the Rovuma and the headwaters of the Lujende.

Meantime, in 1851, Gassiot through Natal crossed the Elephant and Limpopo rivers. Shelley and Orpin in 1852 travelled in the Kalahari, and J. Campbell went to Lake Ngami and the Chobe. Next to Livingstone and Baines at this period, perhaps the most fruitful traveller in South Africa was the trader and hunter James Chapman. From Natal he visited Bechuanaland, Lake Ngami; discovered in 1852 the great salt-pans into which the Ngami discharges its waters; in 1855 he went from Lake Ngami to Walfish Bay, and thence with Baines back to Lake Ngami, and down the Zambezi to the Victoria Falls and on to the Indian Ocean. Chapman made valuable contributions to geology, botany, and zoology. Besides the work he did with Livingstone on the Zambezi, and with Chapman from Walfish Bay, Baines, both an artist and a scientific observer, visited in 1869 the Tati gold-fields and the Matabele country, gathering much information as to its resources. Both his pictures and his publications are valuable contributions to a knowledge of South Africa.

Our knowledge of the Limpopo and the region through which it passes is largely due to the exploration of St. Vincent Erskine in 1868. In 1871–72, Erskine went from Delagoa Bay to the Zambezi, and far, into the interior to the residence of the chief Umzila. In 1868, J. F. Elton was on the Limpopo. In 1870 he went from Tati to the Limpopo, and traversed the region between that and the Indian Ocean. After other journeys south of the Zambezi, Elton was appointed Consul at Mozambique in 1873, and between that and 1877 he visited the Lufiji, and died while with Cotterill, pushing his way by the Shire and Lake Nyassa, north and east to Zanzibar. The journeys of Oates and Dawnay in 1874 to the Victoria Falls deserve mention on account of their contributions to natural history. Mr. Selous has been in South Africa since 1873. He has traversed a large area of South Africa between the Cape and beyond the Central Zambezi; and between Bechuanaland and Matabeleland, and has contributed much to the cartography of the region as well as to a knowledge of its natural history and resources. The travels of the young missionary, Mr. Arnot, should also be mentioned. Between 1882 and 1888, he journeyed from Natal, through the Transvaal, to the Central Zambezi, and north-west to Loanda; east again

across the watershed of the feeders of the Zambesi and Congo, to the Garenganze country west of Lake Bangweolo. The official work of the Cape and Natal Governments should be mentioned, by which a more minute knowledge of their colonies have been accumulated; and of the various semi-military expeditions to Bechuanaland and other outlying countries, the results of which are mostly embodied in "Blue Books."

While Livingstone was making his important discoveries in Southern Africa, an expedition was undertaken, of equal interest, on the East Coast. Captain R. F. Burton, an officer of varied attainments, who had already made a remarkable journey to Mecca, received command of an expedition to penetrate inland from Zanzibar. He was accompanied by Captain Speke, and commenced his journey in 1857, leaving Zanzibar in June. After overcoming many difficulties, these two officers succeeded in reaching the shores of the great lake Tanganyika at Ujiji, at a distance of 700 miles from the coast. On their return Speke made a journey northwards from Unyanyembe, and discovered the southern shore of a vast inland fresh-water lake, which he named the Victoria Nyanza. Captain Speke made careful itineraries and astronomical observations, while Captain Burton undertook the historical and ethnographical departments, with notices of the languages and the peculiarities of the people. Burton's exhaustive and admirable memoir of the lake regions of Central Equatorial Africa contains a full description of the physical geography, the inhabitants and history of the countries between Zanzibar and Lake Tanganyika.

In 1860 another expedition was despatched, under the auspices of the Royal Geographical Society, to land at Zanzibar and explore the Victoria Nyanza, which there was now good reason for believing to be a main source of the Nile. Captain Speke received the command, and he was accompanied by Captain Grant. Leaving Zanzibar in October 1860, these travellers reached Unyanyembe in 1861, and during that and the following year they marched northward to the Victoria Nyanza, skirted the western shore of that great lake, and reached the kingdom of Uganda, discovering the outlet of the Nile at Ripon Falls. Following the river for 120 miles north of the lake, they were then obliged to leave its course, but again struck it some 70 miles lower down, and at length reached Gondokoro on the White Nile in February 1863, where they were met by Samuel Baker. Thus Speke and Grant, by their discovery of the main source of the Nile, solved a question that had exercised the imaginations of geographers since the dawn of history. Their journey brought to our knowledge the flora, fauna, and inhabitants of a vast tract of the interior of Africa.

Before Sir Samuel Baker met Speke and Grant at Gondokoro, he had already made discoveries in the basin of the Atbara. He continued his explorations to the south, and discovered the Muta Nzige of Speke, a second great lake, to which he assigned the name of Albert Nyanza.

In 1871 Baker, in the service of the Khedive of Egypt, again visited the scenes of his former discoveries, with the object of expelling the slave-traders and kidnappers. In the performance of this service he explored the kingdom of Unyoro, collected much valuable geographical information, making important contributions to the hydrography of the great river, as well as to a knowledge of the geography, ethnology, and natural history of the countries watered by that river.

In 1874, Gordon Pasha took up the work of Baker in the service of Egypt, and from his headquarters at Khartum up to 1879 did much directly and indirectly through his subordinates, Chippendall, Gessi, Mason, Emin Pasha, Prout, and others, to clear up still further the hydrography of the Upper Nile and obtain a knowledge of the country to the right and left of the river and Lake Albert. In 1875–76 he himself surveyed the Somerset Nile, in 1877–79 traversed Darfur and Kordofan, and visited Abyssinia.

The additions made to a knowledge of Egypt, of the Nile, and of the region especially between the Nile and the Red Sea, and of the Red Sea Coast, by English officers in Egyptian employment or connected with recent English military expeditions to Egypt, are important enough to deserve mention, many of the results being embodied in English official publications.

The English expedition for the relief of Emin Pasha (1887–89), under Mr. Stanley, has shed much light on the hydrography of the Nile and the Congo; traced the course of the Aruwimi to its source; added much to our knowledge of the forest region of Central Africa, and of its inhabitants, of the country on the west of the Albert Nyanza, of the lake itself, of the Semliki, which connects it with the southern lake (Albert Edward), and of Mount Ruwenzori.

On the West Coast of Africa, the British expeditions up the Niger met with some success. In 1832, Laird and Oldfield, accompanied by R. Lander, further explored the Niger, Oldfield ascending the Benue for 105 miles. Captain H. D. Trotter in 1841–42, added much to a knowledge of the Niger mouth and neighbouring regions. The *Pleiad*, to the command of which Dr. Wm. F. Baikie, R.N., succeeded in 1854, went 250 miles higher up the Niger than had previously been reached. But in a second expedition, in 1857, the *Pleiad* was wrecked, and the other explorers returned to England, leaving Dr. Baikie to continue the work alone. He formed a settlement called Lukoja, at the confluence of the Quorra and Benue, and explored the surrounding country, inducing the king of Nupé to open out roads for the passage of goods to Lukoja. After five years, Dr. Baikie had opened the navigation of the Niger, and established markets for native produce. He visited Kano and collected much information on the Sudan. He died on his way home in 1864.

In 1868–70, Winwood Reade, from Sierra Leone, in two journeys reached the source of the Niger and explored its upper course. He had

previously (1861–63) spent fourteen months in the Gorilla country on the west coast. In 1879, Mr. Ashcroft in the *Henry Venn* carefully surveyed the Binue for 40 miles beyond Yola. In 1885 *et seq.*, on behalf of the Niger Company, Mr. Joseph Thomson ascended the Niger to the neighbourhood of Sokoto, and the company's agents have done much to explore the Binue and other affluents, the main results being embodied in the map by Mr. H. H. Johnston in the 'Proceedings' R.G.S. for 1888. In 1889, Major C. M. Macdonald, Her Majesty's Commissioner, explored the remote northern tributary of the Binue, the Kibbe, proving that it had no connection with the Tuburi marsh and the feeders of Lake Chad.

Captain J. B. Walker explored the river Ogowé in 1864 and 1873. The Calabar river was explored by Oldfield in 1836, by Captains Becroft and King in 1841–42, by Captain J. B. Walker in 1871 and 1875, and by H. H. Johnston in 1888. The missionaries who have been on the river for many years have also added to our knowledge of the region.

Other expeditions in West Africa which deserve mention are the following:—In 1845–46, John Duncan penetrated from the coast through Dahomey as far as Adafuria. Even more fruitful in information were the two missions of Commander F. E. Forbes in 1849–50. In 1861–63, Richard Burton was in this region of Africa, explored the Cameroons Mountains, visited Abeokuta, undertook a mission to the King of Dahomey, penetrating to Boussa on the Niger, collecting during his travels much new information on West Africa. In 1871–72, J. A. Skertchly lived for several months in Dahomey and had exceptional opportunities of witnessing the cruel customs which prevailed in that country. In 1856 Hewett made a journey to the Gambia and Baria in the Jolof country, and in 1881 Gouldsbury, accompanied by Dumbleton and Browning, travelled through Futa Jallon to Timbo.

After Dr. Livingstone's return from his Zambezi expedition in 1864, Sir Roderick Murchison proposed to him the great work of defining the true watershed of Inner Central Africa. He undertook this difficult and perilous enterprise, leaving England in August 1865. After spending some time at Bombay and Zanzibar, he finally advanced into the interior from the mouth of the Rovuma in April 1866, travelling to Ujiji on Lake Tanganyika. From thence Livingstone made his way southwards to the river Chambese, the banks of which he reached in February 1867. He next advanced northwards to Lake Moero, which receives the river Lualaba, and discharges it. In 1868 he was at Lucenda, Cazembe's capital, to the south of Moero, whence he made his way to a more northern lake called Bangweolo. In May 1869 he was once more at Ujiji on Lake Tanganyika, where he received supplies from Zanzibar. His next object was to hit upon the course of the Lualaba by advancing west from Tanganyika. This took him into the previously

unknown region called Manyuema. From 1869 to 1871 the indefatigable traveller made journeys through the Manyuema forests in company with the Arab traders, and at length reached a place called Nyangwe on the Lualaba, which was his farthest point. Without knowing it, he had discovered the head-waters of the Congo. After a long and weary march of 400 miles, Livingstone returned to Ujiji in October 1872, where he was met by a search expedition commanded by Stanley, and received much-needed supplies.

Livingstone and Stanley travelled together from Ujiji to Unyanyembe, whence the latter returned to England. But the aged explorer once more started alone for the unknown interior; and died near the shores of Lake Bangweolo on the 4th of May, 1873. His faithful servants, Chuma and Susi, conveyed the body of their beloved master to Zanzibar; and the remains found a last and fitting resting-place in Westminster Abbey. As an explorer, Livingstone trod some 29,000 miles of African soil, and laid open nearly one million square miles of previously unknown country. Sir Bartle Frere, who was President of the Royal Geographical Society when the news arrived of the great traveller's death, thus concluded his sympathetic sketch of Livingstone's career:—"As a whole the work of his life will surely be held up in ages to come, as one of singular nobleness of design, and of unflinching energy and self-sacrifice in execution. It will be long ere any one man will be able to open so large an extent of unknown land to civilised mankind; yet longer, perhaps, ere we find a brighter example of a life of such continued and useful self-devotion to a noble cause."

Sir Roderick Murchison died on October 22nd, 1871. He had been continuously President of the Royal Geographical Society since 1862. In the year after Sir Roderick's death, the Society, under the Presidency of Sir Henry Rawlinson, organised two great expeditions for the search and relief of Dr. Livingstone: one under Lieut. Grandy, R.N., on the side of the Congo, the expense of which was provided for by the munificence of Mr. J. Young, of Glasgow; the other, under Lieut. Dawson, R.N., by way of the east coast. On Lieut. Dawson's premature return from Zanzibar, Commander Lovett Cameron, R.N., was sent out in command of the East Coast expedition, but, on reaching Unyanyembe, he received tidings of the great traveller's death, which altered his plans. Pushing onwards, Cameron reached Ujiji in February 1874, explored the southern half of Lake Tanganyika, and solved the great problem of its outlet. He then advanced across Manyuema to the Lualaba or Congo, crossed that river, and reached the capital of Urua. Thence he pushed forward across the continent, and arrived at Benguela, on the west coast, in October 1875.

The first journey of H. M. Stanley had been undertaken to bring supplies to Livingstone. This great explorer has since devoted his life to African exploration, with England as his base of operations. In

1874 Stanley undertook a second journey into the interior of Africa, to explore the equatorial lakes and discover the course of the Congo. In March 1875 he reached the southern shore of the Victoria Nyanza, where he put a boat together which he had conveyed from Zanzibar in pieces, and launched it on the lake. He circumnavigated Victoria Nyanza, visited the capital of Uganda, and returned to his camp after an absence of nearly three months. Having made some journeys in the direction of the Albert Nyanza, during which he discovered the southern lake, Muta Nzige (Albert Edward), and Gordon Bennett mountain, and in the kingdom of Rumanika, Stanley proceeded to Ujiji, and followed Cameron's route round the southern half of Lake Tanganyika. He then marched across Manyuema to Nyangwe, and embarked on the Lualaba, which river eventually proved to be the Congo. Leaving Nyangwe on November 5th, 1876, Stanley and his party rapidly descended the river, encountering frequent opposition from hostile tribes until the falls were reached, but it took them five months to pass these cataracts. The distance from Nyangwe to the mouth of the Congo is calculated at 1800 miles, and Stanley was navigating the river from November 1876 to August 1877. Dangers in every form were met with intrepid resolution, while marvellous resource and ingenuity were exercised in combating the great physical obstacles. Sir Roderick Murchison, whose forecasts were seldom wrong, held the opinion that Livingstone's Lualaba was the Congo, and Stanley verified the fact. It is well known that this discovery has led to consequences of great commercial and political importance. Stanley's latest journey, when he ascended the Aruwimi to the Albert Nyanza, has been already referred to.

The Royal Geographical Society, after the return of Cameron and Stanley, resolved to despatch another expedition with the object of exploring the country from the East Coast of Africa to the north end of Lake Nyassa, and between Lakes Nyassa and Tanganyika. The command was given to Mr. Alexander Keith Johnston, a young traveller and geographer of high attainments, and the only son of the eminent cartographer of Edinburgh. He was accompanied by Mr. Joseph Thomson, a young Scotch geologist, and they landed at Dar-es-Salaam on May 19th, 1879. Ascending the course of the river Rufiji, Mr. Keith Johnston was attacked by fever, and died on the 23rd of June. Mr. Thomson, at the age of 22, now found himself alone in the wilds of Africa, charged with heavy responsibility, and in command of a most difficult expedition. The brave young fellow proved equal to the occasion. With his foot on the threshold of the unknown, he resolved to go forward and do his best. "Though the mantle of Mr. Johnston's knowledge could not descend upon me," he wrote, "yet he left his enthusiasm for the work of research, and I resolved to carry out his design as far as lay in my power." On July 2nd Thomson resumed

the journey, and after many long and perilous marches he reached the northern shore of Lake Nyassa. Thence he advanced northward, and in November 1879 he came in sight of Lake Tanganyika. He then resolved to examine the Lukuga outlet of the lake discovered and described by Cameron. Advancing northward along the western shore, he first beheld the noble river Lukuga bearing the drainage waters of the Tanganyika to the Congo and the Atlantic. He followed the river's course for six days, until he could see the great plain of the Lualaba spread out below him. He then made his way round the south end of Tanganyika to Zanzibar, discovering a remarkable sheet of water, which he named Lake Leopold, on his route. Thomson's proudest boast was that of the 150 men who landed with him, he only lost one, and that he never once had to fire a gun either for offensive or defensive purposes.

The success of Mr. Thomson's journey was so complete, that the Royal Geographical Society resolved to employ him on another expedition, with the object of landing at Mombas, and going thence, by Mount Kilimanjaro, to the south-east shore of Victoria Nyanza, returning by the hitherto unvisited Mount Kenia. Thomson left Mombas in March 1883, and his route took him northwards along the eastern side of the snowy mountain, in the country of the Masai. Thence he advanced to the plateau of Lykipia, 8400 feet above the sea, and after crossing a magnificent range of mountains, he found himself at the base of Mount Kenia, a volcanic cone rising to a height of 15,000 feet. From Mount Kenia Thomson marched to the lake Baringo, and the Kavirondo country, which borders on the north-eastern shore of Victoria Nyanza. He intended to have pushed onwards to the Nile, but his stores were exhausted, and he was attacked by fever. He therefore determined to return, which he did by way of the mountain of Elgon or Ligonyi, visiting the extraordinary artificial caves, occupied by whole villages with their cattle, but supposed to have been mines in some remote age. Thomson returned to the coast in June 1884, having made a most remarkable journey, and proved himself to be a traveller of great courage, enterprise, and intelligence.

It was two German missionaries in the employment of the Church Missionary Society, Krapf and Rebmann, who in 1848 were the first Europeans to get a glimpse of Kilimanjaro. The English geologist Thornton accompanied Von der Decken in his visit to the mountain in 1862. In 1865 and following years, Wakefield and New not only visited Kilimanjaro, but partly by personal travel and partly by inquiries among native traders, obtained much information as to the region to the north and west of Kilimanjaro and Mount Kenia, including the Masai country. In 1871 Wakefield ascended Kilimanjaro to its snow-limit. During this period, and up to 1887, Mr. Wakefield made several journeys into the country of the Gallas.

In Somali and Galla Lands we find Smee exploring the Jub in 1811.

In 1848 Captain Cruttenden of the Indian Navy succeeded in penetrating some distance into the mysterious Somali Land, while one of Burton's most memorable and hazardous feats was his visit to the city of Harrar. More recently the Somali Country has been penetrated southward from Berbera, by Mr. F. L. James and his companions, to the Shebeyli, a distance of 850 miles, important contributions being made to natural history and ethnology, as well as geography.

Mr. H. H. Johnston had undertaken a journey to Kilimanjaro before Mr. Thomson's return. This accomplished young traveller had already made more than one journey in the Portuguese colony of the West Coast, and in the Congo Basin, and was known to be a practical naturalist, a good artist, and an able writer. In May 1884 he left Mombasa, and approached the mountain from its southern side; eventually encamping at Taveita, where he obtained guides for the ascent. He succeeded in reaching the central connecting ridge of Kilimanjaro, at a height of 15,150 feet above the sea; over him rising the dazzling snowy dome of Kibo. Another gallant attempt, climbing over slippery rocks in a dense mist, brought him to a height of 16,315 feet above the sea, or within 2000 feet of the summit, which is reckoned at 18,800 feet. During this admirably conducted journey, Mr. Johnston collected 300 species of plants, of which 20 or 30 are new to science, 130 birds, several hundred butterflies and beetles, geological specimens, and vocabularies of four languages, the scenery and natural history being illustrated by drawings from nature.

The Rev. George Grenfell's explorations of the Mobangi, the Lomami, and other tributaries of the Congo, give him a high rank among explorers.

Since Jackson's work, the most important addition to a scientific knowledge of Morocco has been made (1871) by Sir J. D. Hooker and Mr. J. Ball, who made an extensive journey into that country, visiting the city, penetrating into the Great Atlas, reaching a height of over 10,000 feet, investigating its botany, and, with the aid of Mr. Maw, its geology, as well as its geography and inhabitants. In 1888, Joseph Thomson made an expedition to Morocco, during which he crossed the Great Atlas at three places, and observed the great plateau beyond; ascended to over 13,000 feet, making numerous observations on the natural history, geology, and ethnology of the mountains.

Other valuable geographical work has been executed in various parts of Africa in recent years. Dr. Stewart has carefully surveyed Lake Nyassa, Mr. O'Neill has explored the country between Lake Shirwa and Mozambique, and Mr. Comber has ascended the Cameroon Mountains, and mapped a considerable extent of the course of the Congo with scientific accuracy.

During this century Englishmen have done much for the geography and ethnology of Madagascar, with which are connected the names of

Captain W. F. W. Owen, whose surveys of the African Coast are still recognised as authoritative; the Rev. W. Ellis, J. L. Macleod, Captain S. P. Oliver, the Rev. J. Sibree, the Rev. Mr. Baron, and other English missionaries.

Lieut. Wellsted visited Socotra in 1834; and Prof. J. B. Balfour in 1880, the results obtained by the latter being of the highest scientific and geographical value.

Africa has certainly been the favourite ground for British travellers, who were first attracted to that mysterious continent by the vast extent of entirely unknown space which appeared blank upon the maps. As this space was gradually encroached upon the interest became keener and more intense, and enterprise was stimulated by the public at home. Thus a great work had been achieved by British travellers in Africa, while other equally important and interesting fields of research have been comparatively neglected. The New World does not owe much to their exploring enterprise during the century under review, although some good work has been done there.

America.

Captain John Palliser, in 1857 and 1858, explored large tracts of British North America, and determined the existence of practicable passes across the Rocky Mountains within British territory. Other able surveyors and explorers have followed in his footsteps, and to their able and zealous labours the fact is due that a railroad now runs across the continent within the Dominion of Canada. In South America the Straits of Magellan were surveyed by Captains King and Fitz Roy, the west coast by Captains Fitz Roy and Kellett, and Lake Titicaca by Mr. Pentland, who also fixed the position of Cuzco. Mr. Darwin, who served as naturalist with Captain Fitz Roy, made observations on the physical geography of Patagonia and the other regions visited, which have had most fruitful scientific results. The Amazon river was descended from Peru in 1827 and 1834, by Lieuts. Maw and Smyth; and its fauna and flora have been explored and described by three English naturalists, Wallace, Bates, and Spruce. As a scientific geographer, the most thorough and exact workman in the Amazonian basin has been Mr. William Chandless. In 1864 and 1865 he explored the river Purus, one of the least known of the great tributaries of the Amazon, for a distance of 1866 miles. He mapped the course of this previously undefined stream by a continuous series of astronomical observations for latitude and longitude, and true compass bearings. The great danger he encountered in travelling for months through a country of interminable forest, in which hordes of savage Indians lurk, was shown in the treacherous murder of Mr. Chandless's servant and boat's crew, in descending the river. The result of his enterprise was

that he discovered a considerable tract of interesting country previously unknown, and profoundly modified all the maps of the interior of tropical South America.

Further south a noteworthy journey was made by Commander Musters, R.N., in 1872. He landed at Punta Arenas in the Straits of Magellan, and travelled northwards through Patagonia, over 960 miles of latitude, in 780 of which he traversed a country previously quite unknown to Europeans. The interior of British Guiana has also been an interesting field for geographical research, which was first occupied by Sir Robert Schomburgk. This accomplished traveller ascended the Essequibo and Berbice, and reached the Carumá Mountains between 1834 and 1837. His footsteps have been followed by other explorers, the most enterprising, of late years, being Mr. Everard im Thurn, who accomplished the ascent of the isolated Mount Roraima in 1884.

Some further details concerning these and other expeditions may be of service. In 1789 Mackenzie discovered the great river in North America which goes by his name, and succeeded in pushing his way down until he entered the Arctic Ocean by its mouth. Vancouver's expedition of 1792–94 was really intended to supplement the exploration of Cook on the north-west coast of America by carefully surveying and mapping the coast for about twenty degrees, establishing the fact that between 48° and 60° N. lat. the coast is covered by a long series of islands, separated by narrow straits. He carefully surveyed the coast from 30½° N. to Cook's Inlet, examining every important inlet to discover if a passage existed likely to lead to the Atlantic, and proved that there was no such passage. He determined the insularity of Vancouver Island and the character of the dense archipelagoes to the north. Vancouver's discoveries and his observations on the geography, natural history, and ethnology of this coast are still of value. His lieutenant, Broughton, made an equally careful hydrographical survey of the Sea of Tartary and the eastern coasts of Japan. In 1819–22, Franklin led an expedition from Hudson's Bay overland to the mouth of the Coppermine river, and amid the most trying difficulties, travelling 5550 miles, carried out careful physical surveys of the mouth of the Coppermine river, and eastward along the Coronation Gulf. Richardson was surgeon and naturalist of the expedition, and the gains to science, especially to botany and zoology, were of the greatest value. Not only did Richardson contribute scientific appendices to Franklin's narratives (as also to those of Parry, Ross, Back, and others), but, as will be seen below, took a large part in compiling a special work on the Fauna of North America.

In 1825–27 Franklin again, accompanied by Back and Richardson, went out to the same region, proceeding to the mouth of the Mackenzie river, and surveying from the mouth of the Coppermine river westwards to Point Beechey, with results to science again of great importance. In this way Franklin had surveyed over forty-four degrees of longitude.

In 1833–35, Back and King made their way to the Great Fish River, and reached the coast opposite King William Sound. In 1837–39, Franklin's work was resumed by Dease and Simpson. They went down the Coppermine river, and surveyed the coast as far west as Cape Barrow, discovering the Colville river. After wintering on Bear Lake they descended the Coppermine river, and surveyed the coast eastwards on the other side, in this and the following year reaching Cape Britannia, beyond Back's furthest point, thus accomplishing one of the most extensive journeys in these regions.

In 1846–47, Rae travelled from Fort Churchill on Hudson's Bay, by Repulse Bay, across the isthmus to the gulf between Boothia and Melville Peninsula, still further completing his surveys. In 1848–49, Richardson, accompanied by Rae, in search of Franklin, went by Canada to the Mackenzie river, and proceeded eastwards to Cape Hearne. Richardson spent the winter at Fort Confidence, carrying on scientific researches. In 1849 Rae crossed over to Wollaston Land and examined the coasts, and afterwards established the connection between Wollaston and Victoria Land and the existence of a passage between the latter and Boothia. Returning in 1853-54, Rae crossed the isthmus from Repulse Bay, proceeded westwards over the unknown coast to King William's Land, and, as is known, discovered many relics of the lost Franklin expedition.

In 1840 Logan began the Geological and Natural History Survey of Canada, which, under Selwyn, has surveyed a large area of the Dominion, not only for geological purposes, but has collected a vast mass of data on the topography, physical geography, natural history, and ethnology, of regions never before visited, in the North-west Territories, on the Saskatchewan and other rivers and lakes, in British Columbia, and especially in Alaska, the great river and mountain systems of which have been quite recently explored by Dr. Dawson and other members of the staff. The results of all this valuable work are embodied in a series of elaborate reports and maps. Concurrent with this the meteorological service of Canada has done much to obtain accurate information as to the climate of the Dominion, a most important factor in its physical and economical geography.

In 1857–60, Captain Palliser's great expedition, referred to above, was sent out for the exploration of the region between the great lakes and the Saskatchewan and the Rocky Mountains, to the Cascade Range and Vancouver, partly with a view to survey a route for a railway to the Pacific. As the expedition was accompanied by a staff of specialists —Sullivan, Hector, S. J. Dawson, Blakston, Hind, and others, not only were the geographical acquisitions of great extent and value, but important studies were made on the geology and natural resources of the region. In 1862, Milton explored the Red River region, and with Cheadle sought to find a route to British Columbia, exploring what was, to a considerable extent, an unknown region. In 1863-66, Robert

Brown (partly with F. Whymper) did good work in Vancouver Island, his work (1868) being continued by his companion, Leech. F. Whymper afterwards carried out an exploring journey in Alaska, during which he followed the great Yukon river down to its mouth. In 1869–71, R. Bell made a careful survey of Lake Nipigon and the neighbouring region; in 1873, with Selwyn, carried on his survey to the Saskatchewan; in 1874 to Manitoba and Lake Winnipeg, and as far as the Assiniboine. In 1875–77 he surveyed a large part of the coast of Hudson's Bay, and in 1878 between that and Lake Winnipeg along the Nelson river. He returned to Hudson's Bay at a late period and made a thorough study of the whole region, the report thereon being of special geographical and scientific value. Still further additions were made to our knowledge of the geography and meteorology of Hudson's Bay in 1886 and 1887 by the expedition of Lieut. Gordon and Captain Markham.

In 1871 began the fresh surveys for the Canadian Pacific Railway, under Sandford Fleming, with rich results along the whole region both for geography and natural history, as well as geology, the last under the care of Dr. Dawson, who subsequently pushed his survey into Vancouver, Queen Charlotte Island, and Alaska (1887), where he and the members of his staff have added largely to our knowledge of the physical geography and geology of the Yukon region.

The contributions of Macoun, the naturalist of the Canadian Survey, to a knowledge of the climate and natural resources of the Great North-West, deserve special mention.

In 1862 Hind made careful exploration of the interior of Labrador, for a knowledge of which we are also indebted to English missionaries and to the journey of R. F. Holme, in 1887. On the other side additions have been made to our knowledge of Mount St. Elias by the expedition of Seton-Karr in 1886, and of Mr. Topham in 1888. In 1871 *et seq.*, Logan and Murray, the official geologists, surveyed a considerable area of Newfoundland.

In 1882–83 the English International Polar Observing Station was established at Fort Rae, on Great Slave Lake, under Captain Dawson, R.N.

In Jamaica and other British West India Islands, surveys have been established, and through them the islands have been fairly mapped, while the coast and seas have been surveyed by Her Majesty's ships. Many individual travellers have visited these islands during the century, and given to the world the results of their observations.

In Central America the researches by British travellers have been mostly of an archæological character, among the most recent and most important being those of Maudslay in Mexico and Yucatan. Among the important contributions to the physical geography and natural history are those of Belt, while the great undertaking of Messrs. Godwin and Salvin, the 'Biologia Centrali-Americana,' is a contribution of the first importance to geographical distribution.

Pentland, who resided for many years in South America (including Bolivia) as British Consul, and who was an accomplished geologist and botanist, carried on a series of explorations (1825–37) which gained the praise of Humboldt and Cuvier. He traversed a great part of Peru, Chili, and Bolivia. His astronomical observations, his maps, his geological researches, his fixing of the snow-level, are described by Peschel as classical. He measured the most important summits of the Andes, Chimborazo, Illimani, and Sorata. Titicaca Lake was carefully surveyed by him, and many other valuable contributions made to what was then a comparatively unknown region.

In 1826–36, King and Fitzroy, and subsequently Fitzroy alone, in the *Adventurer* and *Beagle*, at various times carried on the survey of the coasts of South America from the La Plata to Cape Horn, and up the whole of the Pacific coast to Guayaquil. The many channels and islands to the south of the mainland, to the Straits of Magellan, were carefully surveyed, as were also the Galapagos Islands on the west coast. By the Santa Cruz river a considerable stretch of the interior of Patagonia was explored. During the later years of his long-continued survey voyage Darwin was on board as naturalist, and his observations, including his journeys into the continent, added greatly to the value of the scientific results of the expedition. In all departments of physical geography and natural history the gain to knowledge was of the highest value, and the expedition memorable as having led Darwin to indicate that series of researches which have had so potent an influence on all departments of science.

In 1827–28 H. L. Maw crossed from the Pacific to the Atlantic; but much more important was the exploration of Smith and Lowe in 1834–36, who journeyed down the Ucayali, Maranhão, and Amazon, and indicated the great water-routes for conveying the products of the Cordilleras to the Atlantic, the Pachitea, Ucayali, and Amazon.

In 1848, Bates and Wallace proceeded to South America for the special purpose of investigating the natural history of the Amazonian region. Bates devoted eleven years to the purpose, following the river to the Peruvian boundary, and exploring several of the affluents of its lower course, the Tocantins, Tapajos, Teffe, Jutahi, Rio Negro, &c., the results being contributions of the highest importance to the physical and biological geography of this important region. Wallace remained four years in the valleys of the Amazon and of the Rio Negro, observing and collecting, with fruitful results to scientific geography, as will be seen in the various works published by him.

In 1852–54, Clements Markham travelled in Peru, and explored the forests of the Eastern Andean range. Again, in 1860–61, he visited Peru for the purpose of obtaining cinchona plants to transfer to India a mission which he accomplished with complete success.

The extensive and fruitful explorations of Chandless, in 1862–69, in

the Amazonian region in these years have been dwelt upon already. In 1873–75 was carried out the expedition under Barrington Brown (a trained geologist), accompanied by the botanist Traill, and Lidstone, an engineer, along the Amazon and its tributaries, the Tapajos, Madeira, Rio Negro, Purus, Jurua, Javary, Solimoens, and others. They traversed 15,000 miles of rivers, and from the facilities afforded them were able to visit places and see much not accessible to the ordinary traveller. Much was added especially to the knowledge of the hydrography of the southern affluents and of the geology of the region generally. About the same time, E. D. Matthews, resident engineer of the projected Madeira and Mamoré Railway, journeyed up the Madeira almost up to its source, and crossed Bolivia and Peru to Areca on the Pacific.

Seeman's journeys (1848) in the Andes of Peru and Ecuador, while on his exploring cruise in the *Herald*, should not be forgotten for their scientific value.

R. H. Schomburgk's extensive and invaluable botanical explorations, 1835–44, in British Guiana (from funds supplied in England) have been referred to above. He traversed the rivers of the country to their sources, and explored in the basins of the Amazon and Orinoco. His botanical and zoological collections over all the region form a valuable acquisition to the British Museum, while his observations on the various aspects of British Guiana may be said to form the bases of all subsequent explorations. The most notable traveller in British Guiana previous to Schomburgk was the famous Waterton, who began his wanderings through the "Wilds of Demerara and Essequibo" in 1812, and at intervals up to 1824 visited the same regions, as well as the Orinoco, Cayenne, and Brazil, with results of much value to natural history. In 1868 *et seq.*, Barrington Brown, as official geologist and surveyor, traversed much of British Guiana, adding considerably to what Schomburgk had done, and discovering the magnificent Kaieteur Falls on the Potaro river. All the great rivers of this colony were surveyed by Brown, and the geology, as well as physical geography, carefully noted and reported upon; at the same time numerous cross-country journeys were made. In 1878, Boddam-Whetham visited British Guiana for the express purpose of ascending the curious mountain Roraima, deemed inaccessible. Though he failed, he added to our knowledge of the mountain and the country.

As has already been pointed out, Mr. Im Thurn succeeded in accomplishing the ascent, and so making a fresh contribution to geographical knowledge. Im Thurn has, moreover, made extensive journeys in the country as a naturalist; added much to our knowledge of the Kaieteur Falls, of the zoology and botany of the country generally, and more especially of the ethnology of its inhabitants, and its industrial resources. Im Thurn's ascent of Roraima in 1884 was followed in 1886 by those of

Cramer and Dressel, whose observations were valuable additions to those of Im Thurn.

Among other important contributions to a knowledge of the northern parts of South America may be mentioned those of Simons, an engineer long resident in Colombia, and who has made careful explorations in the Sierra Nevada of Sta. Marta, and in the Goajira Peninsula; and of R. B. White, who made careful surveys in the western provinces of Colombia. Mudie Spence, resident for some time in Venezuela, added something to our knowledge of that country. In 1879–80 the journeys of E. Whymper in Ecuador were notable, not only for the fact that he succeeded in ascending some of the great summits of the Andes (Chimborazo, Cotopaxi, Cayambe, and several others), but for the observations which he made in the physical geography and natural history of the region traversed, and especially for his fresh contributions to our knowledge of the glaciation of this great mountain chain. Before this, A. Simson crossed the Equadorian Andes from Guayaquil, making important observations on the physical characters of the mountains and of their geology, penetrating into regions rarely visited, and making important additions to our knowledge of the Indian tribes who people the Andes, and especially their eastern slopes.

In Brazil, besides those already referred to, there have been several English travellers and explorers who have helped to increase our knowledge of that vast region.

In 1836–41, G. Gardner made extensive journeys through the northern provinces of Brazil, making careful maps along the route, and noting much as to the mineral and other resources of the region. In 1864 Burton was appointed Consul at Santos in Brazil, and as might be expected endeavoured by travel to gain a practical knowledge of that country. The province of Minas Geraes and the river San Francisco were traversed by him, and he afterwards followed upwards the Paraná and Paraguay. In this and other directions he did much for the geography of South America. In 1872–75, Bigg-Wither spent three years in the Province of Paraná, especially in the region of the eastern tributaries of the Paraná, pioneering as an engineer in the great forests, penetrating into regions probably not before visited, and thus having opportunities of acquiring fresh knowledge, not only in the geography of the country, but in its natural history, and especially its native tribes, among whom were the little-known Botocudos. J. W. Wells spent most of the years 1868–84 in Brazil, partly as an engineer surveying considerable tracts of country, and exploring generally from Rio Janeiro in the south to Maranham in the north, penetrating into many remote parts, making many careful observations for altitude, on the leading topographical features, the hydrography, natural resources, and inhabitants. Wells made a special study of the physical geography and orography

of Brazil, the results of which as embodied in his maps and memoirs are of high value, In 1885, another engineer, W. J. Steains, explored and accurately surveyed the Rio Doce, adding largely to our knowledge of a little-known region.

In Paraguay, the observations of J. P. and W. P. Robertson during their four years' residence, in the early part of the century, deserve mention. Even more important, from a scientific point of view, are the journeys of Mansfield in 1852–53, in Paraguay, and those of young Keith Johnston in 1874–75, the south-western and northern parts of which he studied carefully. For the same reason the observations of Edwin Clark during his travels in Paraguay deserve attention.

Coming further south we must notice the varied observations of Sir Woodbine Parish in the La Plata region. Further south still the journeys of Musters in Patagonia have already been specially referred to. During the voyage of the *Beagle* Darwin made important observations on the physical geography of this region, and the researches of the *Beagle* expedition in the Straits and in Tierra del Fuego have also been mentioned. At a later period the *Beagle* survey was supplemented in many important directions by that of the *Nassau* in 1866–69, and by the very careful observations conducted in the region of Magellan Straits in 1876, by the *Challenger* staff, who landed both in Tierra del Fuego and the mainland to carry out their scientific investigations. Still later, 1878–82, another of H.M. surveying ships, the *Alert* (first under Sir G. Nares and afterwards Captain J. Maclear) visited the Tierra del Fuego region, and examined still more minutely the land on both sides. Dr. Coppinger, the naturalist of the expedition, carried out a valuable series of scientific observations, both oceanic and terrestrial, his contributions to natural history being of special importance. In other parts of South America, both the *Beagle* and the *Alert* expeditions did good service, the former e. g. in the Galapagos Islands, and the latter on the coast of Chile.

The agents of the South America Missionary Society have also contributed to our knowledge of the regions in which they labour, more especially of the country and natives of Tierra del Fuego.

Owing to the value of its scientific observations, especially in the biology and physical geography of the countries visited, J. Ball's voyage round South America in 1882 ought to be mentioned.

Australasia.

There is one more region where English explorers have worked with untiring perseverance and corresponding success. The largest island in the world, like Africa, presented a vast blank on the map, in the commencement of this century. Now, although the vast waterless deserts presented extraordinary difficulties, Australia has been traversed in all directions. In 1837 the Royal Geographical Society began to take an active part in this work by obtaining a grant for equipping an expedition under Lieuts. Grey and Lushington, to explore the western coast of Australia northwards from the Swan river. This action of the Society served as a stimulus to further important enterprises. In 1840 Mr. Edward John Eyre undertook a journey to ascertain whether there were fertile lands in the interior beyond the salt marsh called Lake Torrens in South Australia; and in 1841 he made his way from Adelaide to King George's Sound in the colony of Western Australia, a distance, owing to the sinuosities of the coast-line, of 1040 miles, with scarcely any water. A few years afterwards Captain Sturt explored the courses of the rivers Darling and Murray, and in 1844 he attempted to cross the continent from Adelaide to the Gulf of Carpentaria. He succeeded in penetrating to within 200 miles of the centre of the continent, when the sickness of his followers obliged him to return.

The Royal Geographical Society, impressed by the partial success which had attended the efforts of Eyre and Sturt, submitted a scheme to the Government for the exploration of North Australia, which was adopted. Mr. Augustus Gregory was appointed to command the expedition, and in 1856 he went by sea from Sydney, through Torres Straits, and landed on the banks of the Victoria river. Ascending this stream to its source, Gregory crossed the water-parting at a height of 1660 feet above the sea, and descended a stream flowing south, which ended in a salt lake. Returning down the Victoria, he next advanced to the Gulf of Carpentaria, and explored the region on its eastern side, ending his labours at Brisbane. He had marched over 6500 miles in a country previously unknown.

Attempts to cross the continent from Adelaide continued to be made. M'Douall Stuart, in 1860, got within 245 miles of the northern shore. At length Mr. Richard O'Hara Burke, with his companions Wills and Gray, accomplished this arduous achievement, crossing the continent from south to north. But they nearly all perished; one man, named John King, alone surviving. In 1862, however, M'Douall Stuart, in a second attempt, successfully made the journey from Adelaide to Van Diemen Gulf on the north coast, along the route which has since been adopted for the electric telegraph. This line was laid in 1872.

Subsequent expeditions have been directed to traversing the region between this line of telegraph and the western coast. In 1873 Colonel

Warburton started from Central Mount Stuart on the telegraph line. After eight months of marching, the latter part of the time through an arid region, where the party was kept alive by the meat of their slaughtered camels, and finally narrowly escaped death by starvation, Warburton reached the frontier settlements of Western Australia. He had traversed nearly a thousand miles of entirely new country.

Mr. J. Forrest afterwards explored the same desert region, from Murchison river to the line of the overland telegraph. He marched over 2000 miles, for the most part on foot, 600 of which was over a region almost destitute of water. The Australian explorers have shown indomitable energy and determination. They have endured such privations and sufferings in the pursuit of geographical knowledge as have rarely been surpassed; and their efforts have resulted in the complete exploration of the interior of Australia, which contains some of the most arid deserts in the world.

The following are some additional details concerning the work of British explorers in Australasia:—

England took actual possession of Australia by the founding of the convict colony of Botany Bay (in the neighbourhood of what is now Sydney) just about a century ago, 1788. Since then the exploration of the continent and the survey of its coasts have gone on with increasing rapidity.

In 1789 Bligh, and in 1791 Edwards, surveyed Torres Straits, and in the latter year Maclure a part of the north coast. In 1791 Vancouver discovered King George's Sound, and surveyed a considerable part of the coast. In 1797–1802 Bass, Flinders, and Grant explored and surveyed the whole of the south-east and south coast, discovering Bass's Straits, determining Tasmania to be a separate island, the east coast from Port Stephens to Cape Palmerston, the Barrier Reef, and the whole of the Gulf of Carpentaria. Accompanying Flinders at first in 1801, and afterwards independently, the celebrated botanist Robert Browne explored the flora of Australia and the neighbouring islands, his great works on the subject being the foundation of all subsequent work of the kind. An important subsequent contribution to the same subject, based on personal observation, was the essay on the 'Flora of Australia' by Sir Joseph Hooker. The travels of Gould in Australia in 1838 and subsesequent years, led to his great works on the birds of Australia. Moreover, the narratives of Flinders and the other explorers of the coast contain substantial contributions to the zoology, as well as the ethnology and geology, of the new land. The exploration of the whole coast was completed by King in 1817–24, and by the *Beagle* (1837–43), in which Charles Darwin sailed, and since these, special surveys of various parts of the coast and of Torres Straits have been carried out by Her Majesty's ships.

The exploration of the interior began immediately after the founding

of Botany Bay. The officers of the station pushed their way into the surrounding interior, exploring the whole of the Hawkesbury river region, though it was only in 1813 that the Blue Mountains were crossed by Wentworth and Lawson and the plains of Bathurst discovered.

In 1815 Evans discovered and explored the Lachlan and Macquarrie, Oxley in 1817 and 1818 (accompanied by a botanist) still further tracing their courses, pushing his way also into Queensland and discovering the Brisbane river. In 1819 Hamilton Hume reached the Murrumbidgee, and in 1824 travelled overland from Sydney to Port Philip, crossing the Upper Murray *en route*. In 1827 Allan Cunninghame, the well-known botanist, crossed the Liverpool range and discovered the Darling Downs. In 1828 Hume and Sturt followed the Macquarrie to its junction with the Darling. In 1829 Sturt traced the Murrumbidgee to its junction with the Murray, and traced the latter to Lake Alexandrina.

In 1831 Major Mitchell still further explored the Darling, and in 1835 followed it to near its mouth; in 1836 he followed the Murray to its junction with the Darling, and on his return explored much of what is now the Colony of Victoria. In 1839 Eyre discovered Lake Torrens, and in 1840 explored its eastern shores and the Flinders Range, and accomplished that journey along the south coast, which is one of the most wonderful and exciting in the history of exploration. He found that the country passed through was in the main desert.

In 1844–45 Sturt, starting from the Darling, travelled north-west and north to the Grey Ranges, through great sand-ridges, mud-plains, and the spinifex which covers so much of the interior, to a point within 150 miles of the centre of the continent.

Leichhardt, though a German, carried out his exploring work with the help of colonists, and partly at the expense of the New South Wales Government. He was well equipped for scientific observation, and among the members of his first expedition was John Gilbert, collector for Gould, whose classical work on the Birds of Australia is an important result of exploration. In 1843–46 he explored Queensland from the south to the Gulf of Carpentaria, crossing the Fitzroy river to the head of the gulf, whence he made his way westwards along the north coast as far as Port Essington. Meantime Strzelecki, who had settled in Australia, had been investigating its geology and physical geography, establishing the existence of gold-bearing rocks, and exploring (1840–41) the Australian Alps and the Gippsland Plains. In 1845–58 the Queensland interior was still further explored, the Barcoo discovered, and other intermittent streams flowing towards Torrens, and other lakes by Mitchell, Kennedy, Gregory and others.

Meantime several expeditions were surveying the coasts and channels to the east and north, gathering much information of use to navigators, and at the same time making many observations on the coral reefs and the islands of value to science. Besides the surveys of

Wickham and Stokes in 1837 and 1841, there was that of Captain Blackwood, 1842–45, on the north-east coast, the Barrier Reef and its channels, and the channels and islands of Torres Straits. Further observations were made in the same direction by Captain Owen Stanley (1847–50); while in 1859–60 Captain Denham surveyed the numerous coral banks and reefs in the Coral Sea, and laid down the best navigation route through that to Torres.

In 1829 the colony of West Australia was founded, and the exploration of the continent began from that point. By 1839 the region around Perth, the districts as far south as King George's Sound, and much of the coast region with its rivers, the Grey, the Gascoyne, and the Victoria, were fairly well known, and the generally uninviting nature of the interior established. In the next fifteen years exploration was continued in these directions, and efforts made to explore the interior. In 1855, the expedition under A. Gregory up the Victoria river in the north, was of much scientific value, being accompanied among others by F. von Müller, as naturalist, Baines, the artist, and others, the general results, so far as geology and botany are concerned, being abundant and of a high order.

Müller (appointed Government botanist at Melbourne in 1852), between 1847 and 1862 was engaged in various explorations, particularly for botanical purposes, but also of geographical interest, first in South Australia, subsequently in Victoria, extending to triangulations in the then pathless Australian Alps, resulting in the discovery and fixing of geographical positions of several culminating points of the highest mountains of Australia, hydrometric measurements being also carried on. His journeys amount to about 30,000 miles; his (and Bentham's) great Flora of Australia is a monumental work, while his contributions to the economic and physical geography of Australia are of the greatest practical as well as scientific value.

In 1857–60, great activity was shown in the exploration of the region around Torrens Lake, east and west, by such explorers as Swindon, Warburton, Macdouall Stuart, and others, during which other lakes and mountains were discovered, the physical features filled in with fresh accuracy, and the economical value of the country ascertained. While F. Gregory was exploring the Murchison and the Gascoyne in Western Australia, A. C. Gregory from Moreton Bay explored the Victoria Barcoo river. Other attempts were made to penetrate northwards and westwards from the south coast.

The years 1860–62 were marked by the great expeditions across the continent from north to south by Macdouall Stuart, and by Burke and Wills. They did much to throw light on the true character of the interior, on its geology, its natural resources, the nature of its vegetation, and its scanty water-supply. The search expeditions that were sent out after Burke and Wills in 1861 and 1862, greatly extended our know-

ledge of the country, especially of Central and Northern Queensland. Hewitt made two journeys from south to north. Landsburgh travelled from the mouth of the Albert river, explored the valley of the Gregory and the regions to the south, and through by the Flinders and the Barcoo reached Melbourne, thus crossing the continent. Walker with the same object explored North Queensland. M'Kinley again crossed the continent twice. In South Australia he proceeded to the mouth of the Barcoo, the remarkable formation of which he was the first to make known. By a route a little to the east of that of Burke and Wills, he reached the Gulf of Carpentaria, and on the return journey crossed through Queensland. The information obtained by all these expeditions on the physical geography and natural resources of the country, was of substantial value.

In 1864–66, Jardine and Richardson explored the little known York Peninsula, and Landsburgh explored between Rockhampton and Port Denison. Macintyre crossed Australia from south to north, through the Cooper's Creek region, and again in 1865–66, from the Darling to the Gulf of Carpentaria. Warburton and others extended our knowledge of the regions around Lakes Torrens and Eyre, and Mackinley explored to the west of the Gulf of Carpentaria.

In 1860–74, much was done to obtain a better knowledge of Western Australia, though the results were not encouraging to industry. As far as 121° E., many lakes, mostly salt, were discovered, and hills of considerable height, mostly sand. The most energetic of these explorers were the brothers Forrest, especially John, whose knowledge of surveying and geology, as well as botany enabled him to make observations of more than usual scientific importance. In 1869, John Forrest penetrated through a dense region north-east as far as Mount Wild, 123° E., and in 1870, traversed the south coast eastwards as far as Adelaide. A. Forrest in 1871 reached the Hampton Plains, 124° E., and the other brother, with Kennedy, in 1874 crossed the centre of the continent from west to east, and south to Adelaide, thus adding largely to the knowledge already accumulated.

In 1870–72, the telegraph line from Spencer Gulf to Port Darwin was established, stations being planted at intervals, which became points of observation for meteorological and other purposes, and in other ways have proved useful aids to exploration. Thus in 1872, Giles and Carmichael from the Finke river and the telegraph line reached to 130° over the Macdonnell ranges; 1873, the Gosses to the region of these ranges, Lake Amadeus and the Mann Mountains reached 126° E.; in 1873–4 Giles and Tietkens penetrated to 125° E., over the Musgrave Range. In the same year Warburton made his famous journey from Alice Springs on the telegraph line north-west and west to the west coast between 20° S. and the tropic of Capricorn, revealing more strikingly than had been done before the terrible nature of the interior.

In 1871–78, various expeditions extended the knowledge of Central and Northern Queensland and as far as Port Darwin, opening up York Peninsula, laying down the courses of the principal rivers, and surveying the coasts. In 1875, Giles, Tietkens, and Young still further explored the region between Fowler Bay and Lake Torrens, while Giles in 1875–76 crossed from Lake Torrens by Lake Moore to Perth, and recrossed from Perth by the Ashburton to the telegraph line by the route between Warburton's and Forrest's, without finding the country less desert than did his predecessors.

Between 1864 and 1878 various expeditions had made known the north-west coast and the land near it. Macminn and Wiltshire in 1876 explored the Catherine and Daly rivers, and John Forrest the region between the Ashburton and De Grey rivers, with more encouraging results than had been obtained in the interior further south. In 1879, A. Forrest led an important expedition by Nicoll and Beagle Bays to King's Island. The Fitzroy was followed for some distance; other rivers were discovered, and extensive grassy plains, though further in the interior waterless desert was once more met with, and the telegraph line was reached with difficulty. At the same time Winnecke went from Adelaide and Alice Springs north-east to the Herbert river, discovering some 20,000 square miles of well-watered alluvial land, with rivers and lakes, adapted for cattle and agriculture. In 1879–80, Tietkens was sent by the South Australian Government to the north and north-west, but the results were not encouraging.

In 1878–79, Favenc made a running survey of a route for a railway from Blackall in Queensland to Port Darwin. Two other expeditions for a similar purpose were sent out in 1881. In 1880–89, exploration has continued unabated, several expeditions being in the field every year. The northern territories and the West Queensland border have been specially alluded to. The Kimberley district in the north of West Australia has received more attention, on account of the discovery of gold; but it has also been found to contain large areas of pasture land. In 1883, Winnecke mapped about 20,000 square miles, besides discovering an extensive range and two rivers, one on the west of the Queensland border between 28° and 22° S. 1885, the Gorgon river to the north, its banks covered with jungle, was explored by Captain Carrington. 1885–86, Lindsay cleared up to a considerable extent the hydrography of the Finke river and Lake Eyre. Travelling north to Palmerston he passed through scrub mixed with finely-grassed country. In 1886, Rev. E. Tenison-Woods, an accomplished geologist, also led an expedition northwards towards Palmerston, carefully examining the geology and mineralogy of the country, and finding minerals abundant in various places. In 1888–89, Ernest Favenc examined the country on the Gascoyne and Murchison, starting from Geraldton, Western Australia.

The general result of the century's explorations in Australia may

be summed up thus:—New South Wales and Victoria, with an area of over 400,000 square miles, are fairly well known and mapped; South Australia (900,000 square miles) has at least 250,000 square miles unexplored or little known; Queensland (670,000 square miles) may still have a small extent of unknown land in the far north; the colony of West Australia (1,000,000 square miles) has had one-half of its area crossed in various directions by a number of explorers. One-third of the continent (= 1,000,000 square miles) is well known, while the remainder must be regarded as still imperfectly known.

While the interior has been thus constantly undergoing exploration, the coasts and neighbouring islands have been surveyed year after year by Her Majesty's ships, so that now they are fairly well known and charted. Moreover, each colony has for many years had a fairly well organised geological survey constantly at work, and adding every year to a more thorough knowledge of the geology and physical geography, and especially of the mineral resources of the continent. The collections made by these surveys, and the memoirs and maps published, must be regarded as valuable additions to science. Again, the meteorology of the continent has received attention in all the colonies. Numerous stations have been established, and already a fair idea has been obtained of the character of the climate of the various divisions of Australia. The necessity for husbanding the water supply has led the colonies of Victoria and New South Wales especially to make a minute study of their hydrography, with important results to science as well as to national economy. Geographical societies have been established in all the colonies, except West Australia. These have sent out exploring expeditions to New Guinea, and have been the means of bringing together and publishing the results of exploration in Australia itself, in the neighbouring colonies, as well as in New Guinea and among the Pacific islands.

The more scientific aspects of the geography of Australia, its zoological and botanical distribution, have received special attention at the universities of Sydney and Melbourne, as well as by such well-known writers as Von Müller, M'Coy, and others. The ethnology and distribution of the aborigines has received much attention by various competent writers.

The exploration of New Zealand has been mainly carried out by the well-organised Colonial Survey under Sir James Hector and the late Sir Julius Von Haast. Through the labours of the staff of the Survey the country has been to a large extent mapped and explored, and much has been done for a knowledge of its botany and zoology, as well as for its geology and ethnology. The results have appeared in the publications of the Survey, and a special memoir and works, as well as in the 'Journal of the New Zealand Institute,' in which are also contained the results of the labours of private workers. Several individual travellers

have also done much for a knowledge of the islands and their aboriginal inhabitants, while Her Majesty's surveying ships have practically surveyed and mapped most of the coasts.

The coasts of New Zealand and the surrounding regions were fully surveyed by Captains Stokes and Byron-Drury, in the *Pandora* and *Acheron*, between 1848 and 1858.

The adjacent island of New Guinea is only separated from Australia by Torres Strait, and its south-eastern portion has been partially explored and surveyed, first by British surveying ships, and in later times by missionaries and other visitors who have landed on its shores. The marine surveys were commenced by Captain Blackwood in 1842, in the *Fly*, who examined 140 miles of coast, including the delta of the Fly river. In 1849 Captain Owen Stanley, in the *Rattlesnake*, continued the survey of south-eastern New Guinea, and completed that of the Louisiade Archipelago. A high mountain range was seen at a distance, extending for nearly 200 miles, with peaks 10,000 feet high, while Mount Owen Stanley itself rises to 12,800 feet above the sea. In 1873 Captain Moresby, in the *Basilisk*, discovered a large bay at the extreme end of the Owen Stanley Peninsula, with an archipelago of lofty and richly wooded islands. He also fixed the position, and laid down the coast-line of the D'Entrecasteaux group, which was seen by that navigator from a distance, when in search of La Pérouse in 1793. Since Captain Moresby's visit, English missionaries have secured a footing on the coast of New Guinea, and have made some interesting journeys to the foot of the Owen Stanley range. The work of exploration is now progressing. The explorations of Mr. Forbes in southern New Guinea must also be mentioned, as also Sir W. Macgregor's journey to the summit of the Owen Stanley range.

In the Malay Archipelago also English surveying vessels and English travellers have done much good work, the name of A. R. Wallace being intimately connected with this region.

With regard to the Pacific generally, Cook had completed his exploring work shortly before the period under review; but the work of exploration and survey by English navigators was continued with unabated vigour, and as each vessel had as a rule a naturalist on board, much good work was done for science. In 1788, Gilbert and Marshall rediscovered and surveyed the islands named after them. In 1788–89, Bligh visited the Society Islands and Fiji, and discovered the most northerly of the New Hebrides. In 1791, Vancouver, with his principal officer Broughton and scientific staff, made a very thorough exploration of the Sandwich Islands, and of their ethnology and natural history. Broughton discovered the Chatham Islands. In 1797, Wilson visited the Society Islands, Tonga, Fiji, the Marquesas, and discovered several of the Carolines.

Before the end of the century both traders and missionaries had

found their way into the Pacific, and did much to extend our knowledge of its islands. The contributions of the missionaries to the ethnology of the islands are of special importance, and among them the names of Williams, Ellis, Whitmee, and Turner stand out prominent.

In 1824, Beechey made a thorough survey of the Paumotu group, visited Tahiti and the Sandwich Islands, explored the whole of the Behring Sea and Strait, discovered the Bonin Islands, and surveyed the Loo-choos. In 1831–36, the great expedition under Fitzroy, in the *Beagle*, of which Darwin was the naturalist, besides surveying the Pacific coasts of South America and the Galapagos, visited the Society Islands and New Zealand, and besides the survey and purely geographical work accomplished, Darwin's contributions to physical geography and geology were of the highest importance, and his observations in the Pacific as in the Indian Archipelago led to his famous theory on the origin and structure of coral islands.

In 1835–41, the *Sulphur*, first under Beechey and then under Belcher, surveyed a great part of the Pacific coast of North and Central America, crossed the Pacific, visiting, surveying, and exploring San Blas, Magellan, the Revilla Gigedo Islands, Marquesas, the Low Archipelago, Fijis, New Hebrides, New Britain, and other groups.

In 1849 and following years, Erskine cruised with good results in the South-west Pacific, visiting and exploring the Fijis and other groups, and making useful observations among the inhabitants, while in 1853 Captain Denham did much careful survey work in the same region; and in 1850 Brenchley and Kemp visited the Sandwich Islands.

Among other islands explored (1849–51), merely for botanical purposes, by Seeman as naturalist of the *Herald* (Kellett) was the Sandwich group; while the exploration of the Fiji Islands in 1860–61 was of the most thorough character, leading to a scientific study of the islands and their inhabitants, and especially to a valuable monograph on their botany. The *Herald*, moreover, surveyed the whole of the Colombian coast from Guayaquil to Panama.

In 1875–77, the Fijis were more or less explored by Goodenough and Parkinson, the latter visiting the Tonga and Samoa groups in 1876. Whitmee's researches in the Gilbert group in 1870 deserve notice, as also the labours of Brown and Cockerell in New Britain and New Ireland in 1875.

During the voyage of 1872–76 the *Challenger* visited many of the Pacific islands, with results to scientific geography of the first value, as will be seen from the official narrative and the special memoirs, as well as the interesting special observations made by Professor Moseley. Among the islands thus visited were Tahiti, the Sandwich Islands, the Carolines, the Admiralty Islands, the Louisiads, the Friendly Islands, the New Hebrides, Fiji, and Juan Fernandez.

In 1881 *et seq.*, Surgeon H. B. Guppy, on board H.M.S. *Lark*, had

favourable opportunities of studying the Solomon Islands. Those opportunities he turned to good account by making observations in all directions. The physical geography of the islands and their ethnology received his attention; and more especially their curious geology, as well as botany and zoology, the result being a contribution of high value to a knowledge of one of the most interesting island groups in the Pacific. In 1886–89, Mr. Woodford added very considerably to Mr. Guppy's observations in these islands, living there for many months, mixing freely with the people, and penetrating into the interior. He was thus able to study favourably the hydrography of the islands, their forest and vegetable products, as well as their zoology, and more particularly the ornithology, in which subject Mr. Woodford is a specialist.

Europe.

It will be appropriate briefly to refer to some of the geographical work done in Europe during the century by British travellers and men of science. While the Ordnance Survey of the British Islands, begun over a century ago, has almost completed the topography of Great Britain, the Geological Survey has accumulated the materials for a complete study of its physical geography. The seas around the shores of the islands have been investigated by various deep-sea expeditions. On the Continent of Europe British travellers have been everywhere during the century, but it would be out of place to refer in detail to what the Germans call "Globetrotterthum." With the exploration of the great Alpine region, and the investigation of its glaciers, the English Alpine Club has been intimately associated; and if we gave the names of all who have done something for Alpine topography and physical geography the list would be a long one. The Alpine Club map of Switzerland is an achievement worthy of record. Mr. Reilly's maps of Mont Blanc and the south side of the Pennine Chain, issued over twenty-five years ago, were acknowledged at the time to be remarkable productions, and their author had the credit of anticipating the French and Italian surveyors. The names both of J. D. Forbes and of Tyndall are intimately associated with the Alps, not only for the light they threw on their topography, but also, and mainly, for their classical researches into glaciation. For a knowledge of the scientific aspect of the great Alpine groups the late John Ball did much, while Professor Bonney's contributions to the physical geography as well as geology of the Alps are admittedly of great value. For the historical geography of the great mountain region no one has done more than the Rev. W. A. B. Coolidge, while in more respects than one the name of Edward Whymper is intimately associated with the Alps.

Forbes's researches on the glaciers of Norway, though not so extensive as in the case of Switzerland, were not of less scientific value. Murchi-

son's investigations of the Ural Chain, and Murchison, Lyell, and Sedgwick's journeys in the volcanic region of Auvergne, while mainly for geological purposes, yielded valuable results in physical geography; and the same may be said of Lyell's investigations of the volcanic region of Sicily, and of the coasts of Denmark. The topographical work carried out in Greece and the Balkan Peninsula, both by private travellers and through the Hellenic Society, may be mentioned.

Marine Surveys.

England has done her full share of marine surveying for the benefit of all the maritime countries of the world. Besides her own coasts she has sent her surveyors into the most distant seas. Admirals Smyth and Beaufort were at work in the Mediterranean, the former executing a valuable atlas of Sicily, and other useful work, between 1812 and 1824. They were followed by Captains Spratt, Graves, and other accomplished officers, who contributed largely to the safety of navigation in the Mediterranean. The Azores were surveyed by Captain Vidal in 1842; while it has already been mentioned that Captains Fitzroy and Kellett made surveys of Magellan's Straits and the west coast of South America, as well as of the east coasts of that continent south of Uruguay. Richards surveyed the intricate shores of British Columbia and Vancouver Island. Magellan's Straits have since been charted in more detail by Mayne, Nares, and others. To English surveyors are also due the surveys of the south, east, and most of the west coasts of Africa, of Madagascar, Australia, New Zealand, China, and Japan; while the officers of the British Indian Navy have furnished charts of all the coasts from Suez to Singapore. British surveying ships have, in short, been continuously at work in all parts of the world during the present century.

Deep Sea Research.

In more recent years the science of oceanic geography has called the attention of surveyors to the bed of the ocean, and to the registration of series of deep-sea soundings. In 1840 Sir James Ross, in the *Erebus*, obtained a sounding in 2677 fathoms, and in 1847 Captain Owen Stanley, of the *Rattlesnake*, found bottom near the equator in 2600 fathoms. Then followed the soundings of the Atlantic, to find a bed for the telegraph wire. In 1857 Lieut. Deryman, in the *Cyclops*, obtained a complete series of deep-sea soundings across the Atlantic Ocean, showing the great fall of 7200 feet near the Irish coast, and the Telegraphic Plateau, thence to Newfoundland. The same officer took a line of soundings from Newfoundland to Fayal, and thence to England in 1858, and another across the Bay of Biscay, and along the coast of Portugal in 1859. Sir Leopold M'Clintock, in 1860, sounded across the Atlantic

by a more northern route; and the work of exploring the ocean's bed, and examining its fauna by means of dredging, was continued in subsequent years by scientific men on board the *Porcupine*, *Lightning*, and *Triton* steamers. The important voyage of the *Challenger* under Captain Nares, from 1873 to 1876, extended these researches over parts of the Atlantic, Pacific, and Indian Oceans, and added largely to our knowledge of the physical geography of the sea. The greatest depth sounded by the *Challenger* was 4475 fathoms south of the Ladrones. The *Egeria* has since obtained a deep-sea sounding, south of the Friendly Islands, of 4430 fathoms. The examination of the bed of the ocean, and the closer investigation of its temperatures and climates, has opened out a new branch of physical geography of the deepest interest, in which nearly all the maritime nations of the earth are sending forth fellow-workers with the surveyors of England.

Cartography.

The production of maps and geographical treatises has made progress, though not in proportion to the work done by explorers; for it is undoubtedly true that the British people, as compared with other nations, have been more active in the field than in the study. The most distinguished cartographers have been Arrowsmith, Walker, and Keith Johnston. John Arrowsmith succeeded his uncle Aaron, and published the first edition of his admirable London Atlas in 1834. From that time until 1861, he worked ardently and with discriminating intelligence. The perspicacity and fidelity with which he laboured for many years, in analysing and comparing the crude and hastily constructed sketch-maps which travellers brought home from distant lands, and the pains he took to delineate such fresh knowledge correctly, renders his name justly famous among geographers. He died in his 84th year, in 1873.

John Walker was the engraver of the Indian Atlas, which was designed to cover 177 sheets. The judgment and ability he brought to his task is shown by the often disputed but ever approved excellence of his work. The most beautiful specimens of his lithography are the twenty-eight sheets of Colonel Robinson's survey of Jhelum and Rawal Pindi in the Punjab, and his maps showing the results of Colonel Montgomerie's surveys in Kashmir. Mr. Walker died in 1873, aged 85, after having been in the employment of the Government of India for forty-eight years. Most of the results of the Indian Surveys have since been produced at Calcutta.

Alexander Keith Johnston, of Edinburgh, was an accomplished geographer as well as an engraver and cartographer. The writings of Ritter and Berghaus on physical geography, and a wish expressed by Humboldt to see an English physical atlas, constructed on an adequate

scale, determined Mr. Keith Johnston to devote his attention to physical geography. Physical geography was at that time almost an unknown science in English places of instruction, and an atlas could not prove a paying speculation, but Mr. Keith Johnston was willing to make sacrifices. The Physical Atlas was a work of great value to geographers, and the two editions cost their author ten years of the best period of his life. The second appeared in 1856. The merits of the first edition were explained at a meeting of the Geographical Society of Paris, under the presidency of M. Jomard. It is not too much to say that the publication of Keith Johnston's Physical Atlas marked a period, and that from that time the study of physical geography took its place among the necessary branches of a liberal education. In 1850 Keith Johnston published his great Dictionary of Geography, which has gone through many editions. In 1855 he began his Royal Atlas of modern geography, and the remainder of his life was mainly devoted to the production of maps and handbooks for educational purposes.

The places of Arrowsmith, Walker, and Keith Johnston have been taken by Messrs. Stanford, Philips, Weller, and the successors of Mr. Keith Johnston in Edinburgh, who have maintained the excellence of their predecessors, and in some respects have improved upon it. But the directors of education in Great Britain have been slow to give that due prominence to the teaching of geography which its importance demands. The study of the systems adopted in France, Germany, and other countries has led to efforts being made to improve the position of the science, and the recent appointment of Readers in Geography at the Universities of Oxford and Cambridge, which is due to the representations of the Royal Geographical Society, will, it may be hoped, mark another advance, similar to that which was secured by the publication of the Physical Atlas. In other directions geographical education has been considerably improved in Great Britain as the result of the efforts made by the Society since 1884.

A

BIBLIOGRAPHY OF THE BARBARY STATES.
PART IV.

A BIBLIOGRAPHY OF MOROCCO,

FROM

THE EARLIEST TIMES TO THE END OF 1891.

BY

LIEUT.-COL. SIR R. LAMBERT PLAYFAIR, K.C.M.G., ETC.,
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INTRODUCTION.

More than two and a half centuries ago, one of the earliest of English writers on Morocco apologised for adding to what he conceived to be the plethora of works on that portion of Northern Africa. For he tells us, with imperfect bibliographical knowledge, "There have been whole volumes written of this place: as—1. That of Hanno, a MS. that was preserved for no less than 1400 years, and a hundred years ago printed by the noble Stephanus.* 2. That of Alcazar,† kept in the Tower of Tetuan. And 3. That of Leo Affricanus, written by him as he travelled in that country in the Hegeira 953, and in the year of our Lord 1528,‡ and translated by Mr. Robert Pary,§ of Cambridge, in the year 1600. And 4. That of Abasti vel Mammulid, whereof there are but two copies in the world: one is kept by the Governour of Morocco, and the other by the Grand Seignior; it being death for any man to take a map of that country without their leave." Leaving out of account this more or less apocryphal MS.‖ and that preserved in the "Tower of Tetuan," which must be relegated to the same category, the writer of the pamphlet from which this apologetic preface is quoted, rather understated the actual literature on Morocco existing in 1664; for his own work is No. 226 of our list. One hundred and forty-four years later—in 1809—Jackson (No. 501) finds it necessary to print a similar plaint, though with better reason, since the published material had, in the interval, more than doubled. "It was justly observed," the author of 'An Account of the Empire of Morocco' tells us, "by Mr. Matra, our last consul at Morocco, that 'there are more books written on Barbary than on any other country, and yet there is no country with which we are so little acquainted.'" In 1846 Renou (No. 706) compiled the first formal catalogue of the works on Morocco then existing. Of these he enumerates 264, though several noted by him vaguely under the supposed authors' names had never appeared, while many were given erroneously or repeated under other titles. In 1889 M. de la Martinière attempted (Nos. 1710, 1910) a supplement to that catalogue; but though

* Actually, in 1533 (No. 2).

† Of which we do not possess any knowledge.

‡ This may be misprint for 1520. For in that year Leo was captured by Pirates and taken to Rome, so that his travels were all antecedent to the date mentioned.

§ Not Robert Pary, but John Pory, No. 109.

‖ Query? No. 871.

his list was neither accurate nor complete, he added 527 titles to that of his predecessor, thus bringing up the roll of Moroccan literature to 791. The next author on the Empire of Moulai El Hassan, who thinks it necessary to justify the existence of his work, will require to face the fact that, exclusive of manuscript records, of which a prodigious quantity are stored in the archives of every country having relations with Morocco, there are enumerated in the Bibliography to which these lines form the introduction, the titles of over 2000 contributions to its history, geography, and politics, for the most part printed, which we have thought worthy of being recorded. Had it been possible or useful to make a memorandum of every ephemeral newspaper article within the last fifty years, this volume would have been swollen out of all proportion to the value of its contents. As it is, the number of documents which we have found it necessary to examine has extended far beyond what we believed to exist, when the task of cataloguing them was begun, several years ago, by the compilers, each independently of the other, their labours being conjoined only when they became aware that unwittingly they were performing the same labour in duplicate. The 'Bibliography,' now completed up to the close of 1891, is the outcome of a copartnery, for the responsibility of which they are conjointly liable. They will, therefore, not add to a memoir already—for reasons beyond their control—sufficiently long, by any superfluous geographical or bibliographical comments. However, to avoid the risk of misunderstanding, it is proper to offer a few prefatory remarks to this last of the bibliographies of the old Barbary States, and the only one which has preserved its independence.

First, then, some explanations are called for by the map. A glance at the one appended, without an exact acquaintance with the materials from which it has been so carefully drawn, might, suggest the impression that Morocco is a well-explored country. In truth, the very opposite is the case. Now, as in Jackson's day, there is no country near Europe which is so little known. No part of it has been accurately surveyed; the best mapped districts are laid down solely from running *reconnaisances* or sketch-maps. Positions fixed by astronomical observations are few. Many wide areas have never been visited by any Europeans, and most of the Atlas is at this hour as little known as it was in the days of Leo Africanus. There are cities within a few hours' ride of Tangier which no person capable of giving a correct account of his observations has visited; and there are others not much further away, to attempt to enter which—Zarhoun, for example—would, were the intruder detected, be certain death. There is scarcely a river laid down with even approximate accuracy, and not to enumerate more distant provinces, the entire Riff country, that bold *massif* which is familiar to the thousands who every year sail up and down the Mediterranean, is less explored than many regions in the centre of the continent of which Maghreb-al-Aksa forms a part. In the extreme north, and on the routes between the coast and Fez, in one direction, and the

city of Morocco (Merakish) in another, the officers accompanying embassies have enabled us to obtain more correct details than elsewhere; while the travels of De Foucauld in various parts of the empire, and of Thomson in the south, are guarantees, that, so far as circumstances permitted, their lines are mapped with more care than those in other parts of the country. But the fanaticism of the people, the jealousy of "Christians," and the passive obstruction of the Government, have practically closed to Europeans large regions, not immediately on the coast or on the bridle-paths to the capitals. Even Wazan, now as frequently visited as Fez or Merakish, was until a few years ago (No. 1362) a closed town, and fifty or sixty years ago Fez and Merakish could be visited only by favour of the Sultan, and even then with many precautions not to arouse the hostility of the citizens. Yet a century or two earlier many Infidels—bond and free—lived in or traded with these cities, and much of the interior of Morocco, is now so shut against them that the basis of our present map is in reality that of Major Beaudoin (1848), most of which was founded upon "renseignements recueillés auprès des indigènes," namely, camel-drivers, pilgrims and traders. The coast-line alone is from "actual survey."

Nor is Morocco, as might be inferred from the numerous place-names on the map, a thickly populated country. On the contrary, though never at any time teeming with men, the empire is at present, if there is any dependence to be placed upon the data of the mediæval chroniclers, and the extent of the ruins which exist in many places, more sparsely inhabited than at the period of its greatest prosperity. War, famine, and pestilence, have decimated it at frequent intervals, until to-day—though there are not sufficient data for arriving at a sound estimate—Moulai El Hassan does, in all likelihood, rule 4,000,000 subjects. This conclusion is reached after being convinced that all the old guesses at the population of the cities—those of Jackson in an eminent degree—were grossly exaggerated. But as modern calculations vary all the way from a million and a half to fifteen millions, there is ample room for a difference of opinion.

The roads traced on the map are mere natural bridle-paths, worn in the plain, along the hill-side,* and over the passes by the endless droves of camels and horses, and mules and donkeys, and cattle, and goats and sheep, throughout uncounted ages—broader where the contour of the ground permits the caravan to spread a little, and at places so narrow that the ill-conditioned camel leaves no room for a rival to pass. Made roads are unknown outside the towns, and even there the exceptions to the rule are doubtful, while bridges over the rivers are few. Even ferries are so rare that eight years ago one of us crossed the Sebu—one of the largest streams in the country, on the direct route from Fez to Tangier—on bundles of rushes dragged across by ropes, a mode of transit

* The Roman military "viæ" seem to have been similar tracks: at all events they are not now visible and not used.

still common throughout inner Africa. In summer, these rivers are often half dry; in winter, after the rains or the melting of the Atlas snows, they are raging torrents, in crossing which couriers are often drowned, less adventurous travellers being frequently compelled to delay their journey for days until the fords are passable. In or about some of the towns a few wheeled carriages are seen, but over the country at large these are unknown, horses, camels, mules and donkeys, being the sole pack and riding animals.

Along these caravan routes, except where here and there a little town or village lays itself out for trade, houses are not numerous. For hour after hour the "howaji" may amble along without seeing a human being, unless it may be a group of country folk with a few donkeys laden with crates of fowls and eggs on their way to market, and—the chances are—armed for all emergencies, or a soldier of the Sultan bent on a Shereefian errand, or perhaps a few wayfarers like ourselves with camp baggage and stores, who to the infidel's *Salaam Alikum!* Peace be with you—respond somewhat sulkily "To those to whom Allah hath given peace." Hotels are unknown in the interior, and the rude caravanserais of the towns are less inviting than the tent to all not in fear of robbery or molestation from the wandering tribesmen who are apt to descend from the hills to take tithe of the more peaceful residents of the plains. The building of villages off travel-routes is due mainly to the desire of the country people to avoid exactions by government troops and the "mouna" or gift of provisions and fodder demanded by privileged travellers. Hence the permanent hamlets are frequently built in secluded places, or in spots on the mountain side difficult to reach and easy to defend. These, with the white-domed tombs of holy men, surrounded by groves of palmetto and olive, or in the south amid argan and date palms, form picturesque objects in the rather monotonous landscape of the more level parts of Morocco, where little ant-hills—busy hives in summer, stumbling-holes in winter—the industrious *ateuchus*-beetle, and the crested lark are often for hours the only signs of life in a tawny land, bright with flowers in spring, and burnt up—"Brown Barbary" in sooth—after the long drought of the torrid months.

The numerous names on the maps are due to the fact that not only are the permanent villages (jars), marked, but in many instances the temporary encampment of camel-hair tents (duars), the position of which is determined by the presence of springs and pasture. Again, on all Morocco maps the "Saints' Houses" or tombs of consequence must be marked. Usually these are quite solitary or are guarded by the family of the pious soul who in death is a relative even more lucrative than in life. Yet in not a few instances quite a village has gathered round the tomb, and at the time of pilgrimage the encampments of these local "hadjis" and those who minister to their wants give the spot a geographical importance which a day or two later it appears not to deserve. All the places beginning with "Sidi" (Lord, master) are either actually

tombs or the tomb has formed, as in so many of our cathedral cities, the nucleus of the town or village. A striking example of this is afforded by Zerhun—generally known as Sidi Mowlai Edris, from the fact that it contains the tomb of the father of the founder of the city of Fez, and the first sovereign of the Edrissite dynasty. Even yet, a Jew or a Christian dare not enter it, and the only permanent inhabitants are Shereefs or descendants of Mohammed, and of the saint whose remains lie in its principal mosque.

Furthermore, all the principal market-places must be indicated From time immemorial business has been done at these gatherings, the same spot having a market for hundreds of years on the same day. A traveller in Morocco is often surprised to find all the paths leading to a particular valley crowded with horsemen and footmen, with sheep and cattle, and camels and donkeys, and mules and horses, until they end their journey in a busy fair, attended by hundreds or even thousands of people. Clay ovens are busily at work. Little charcoal fires are sending forth the odour of cookery. Snake-charmers are following their trade, wandering musicians rending the air with shrill pipes, and story-tellers surrounded by a circle of eager listeners, while all the other motley attendants of such a gathering noisily pursue their callings amid the shouts, and music, and a babel of voices buying and selling and arguing, and praying, swearing by the beard of the Prophet over the value of a farthing, or it may be—an oath rarer now-a-days than in times when our countrymen were fewer or better—solemnly asseverating the truth of a doubtful statement "on the word of an Englishman." A few days later, when the traveller passes that way again, the valley is silent. The clay ovens are crumbling into mud, and the water-holes are growing green around the little turtles which alone disturb them, while a few squeaking tortoises among the palmettoes on the hill-side, a wild boar disturbed in his lair, a covey of partridges flushed by our horses' hoofs, or a shaven-headed boy tending a few fat-tailed sheep, are about the only signs of life on a spot where so recently there was such a clatter of many tongues.

These fairs are known by the names of the days on which they are held, put after the word "Sok" (market). Thus Sok el Had is Sunday market; Sok el Theneïn, Monday market; Sok el Tleta, Tuesday market, Sok el Arba, Wednesday market, and Sok el Khamis, Thursday market. This system of nomenclature naturally leads to a repetition of the same place-name in different parts of the country.

"Kasba," another name of frequent occurrence, means the castle or residence of a Kaïd or Governor. Most of the large towns are divided into a "Kasba," or official portion, a "Medina" or general quarter, and a "Mellah" or Jewry, the word Mellah meaning really the place of salting, the Jews in former times being compelled to salt the heads of criminals stuck over the city gates. "Ait," "Ida," or "Idan" is the Berber designation of a tribe, just as "Beni" (sons of) and "Uled" are the Arab forms, though in one or two instances the Berbers have

adopted the Arabic word. The word "Ras" is applied both to a cape and a spring, though the more usual term for the latter is "Ain" (plural "Aiun"). "Wad" is the Arabic and "Asif" the Berber for a river. "Adrar" is the Berber equivalent of the Arabic "Jebel," a mountain, while "Kasar" is used to describe a palace or royal castle, or the place where one formerly existed. Most of the coast places have two names, a native—Berber or Arabic—and a Portuguese or Spanish, the latter being usually adopted by the Europeans. Thus Dar-el-beida is universally known as Casablanca—both names meaning "White House," though in the Foreign Office lists it is called by the former title, a circumstance which some years ago led to an awkward confusion in the answering of a question in Parliament regarding it. In like manner, Mogador, is always called by the natives Suiëra, while Tangier is a corruption of Tanja; Sallee of S'la, Laraiche (or Larache) of El Araïsh, Mekenes of Miknas or Miknasa, Fez of Fas, and so forth; while the town called in Europe the "City of Morocco" is among natives and Europeans alike spoken of as Merakish.

It therefore follows that the many names on the map must not be taken to infer—as they would in most other countries—a corresponding abundance of the dwellings of men. Yet it is necessary to mark these abodes of the Dead and other places of the kind indicated. For in Morocco distances are reckoned in hours' ride from a saint's tomb, or a spring, or from a Kasbah—built, it may be, in the middle ages by the toil of Christian captives, or from the design of some Andalusian engineer, and picturesquely old-world in appearance and its inefficiency against modern artillery.

Morocco is indeed "un Empire qui croule" (No. 1711). Everything is crumbling. The towns on the coast exhibit a gloss of Europe and the nineteenth century; but those of the interior are, to a large extent, semi-ruins amid all-abounding filth. The walls are generally broken down. Nobody thinks of properly repairing his house, and if he inherits one, his first thought is to pull it down to see whether his predecessor has not concealed money in its walls. A general air of disrepair possesses the land—the little Berber villages with their fences of prickly pear, and the castles which have not been bombarded in the endless civil wars, being almost the only monuments of stability in this realm of dismantled towns, deserted cities, and hamlets of tents, here to-day and away to-morrow.

The very earth shares in the down-at-heels aspect of the works of man which litter it. Morocco, as a rule, is a treeless land—a few woods, some patches on the hills-scalps, chiefly around cemeteries and "Koubbas,"* and in the south date, arar and argan groves, being the chief representatives of the natural forests which at one time covered the greater part of Western Barbary. Ibn Khaldun (No. 738, vol. i., p. 215) tells us that before El-Kahéna the Berber Queen of Jeraoua,

* The domed tombs or "Saints' houses" of the Europeans.

destroyed all the villages and farms throughout the country over which her conquests extended, the wide region between Tripoli and Tangier had the appearance of an immense thicket, under the shade of which arose a multitude of hamlets touching each other.* It is now possible to travel, in Tunisia at all events, for days without seeing a tree, though the remains of Roman oil-mills are frequent throughout a region not now containing a tenth of the population it did when the "Province of Africa." Even in the vicinity of Tangier, there were two centuries ago woods which harboured the troops of Ghailan, who harassed the English garrison. There, as nearly everywhere else, the timber has been recklessly destroyed for fuel or for building purposes, or by military necessity, or out of mere wantonness, until it is a common sight to come upon women unearthing palmetto roots to make charcoal, while the narrowness of the rooms in most houses may be accounted for by the difficulty in obtaining beams of any great length. The Moors do not even look upon timber as Lord Caernarvon did,—"an excrescence of the earth, provided by God for the payment of debts." Destruction for destruction's sake goes on. Not long ago a forest in one of the Southern Provinces was ignited, and blazed for weeks. For many miles round the towns the charcoal-burners and wood-collectors are at work. The brush and underwood, which is all that is left of the ancient forests, when not cut for heating the ovens—is fired in the day-time when the sun is up, and twigs alone perish, leaving the blackened stumps and branches ready to be cut.†

The result is that Morocco is suffering, has suffered, and will suffer after the fashion which has befallen or is in store for every country equally improvident. The baked soil, unprotected by vegetation, is swept off the hill-sides by the heavy rains, covering the fertile valleys below with a débris of rock, gravel and earth. The springs, ceasing to be fed by the water infiltrating into the ground, dry up, and the rivers, instead of flowing in a steady course all the year round, are torrents at intervals from November to April and dried up or insufficient in amount for the rest of the twelve months. Streams once navigable are no longer so, and the current being unable to sweep the silt seaward, the mouths of most of them are fast shoaling up.

There are also conspicuous proofs that within comparatively recent times the rainfall of Morocco has diminished in quantity, probably owing to the absence of cool woods no longer helping the passing clouds to precipitate their burden; and in places the uncovered sandstone is rapidly disintegrating into drifting sand after the manner in which the Sahara has been formed. There are numerous spots which bear on the face of them evidence of having been formerly lakes, or lake-like expansions of rivers which now run contracted within narrow limits of what must have formerly been a broad valley, the successive withdrawals of the

* See also Playfair's 'Travels in the Footsteps of Bruce in Algeria and Tunis,' pp. 34, 153, 179, 191, 212, 226.

† *Times of Morocco*, No. 70, March 10th, 1887.

river within which or of the lake now vanished being marked by distinct terraces or benches not unlike those of the Fraser in British Columbia. Morocco is, in short, a crumbling empire, physically, politically, but not religiously. For if Moghreb-al Aksa has fallen from its ancient position, if it no longer produces great warriors, or men of letters, it is, without being a moral country, the last stronghold of Islam incorrupt.

The literature which is recorded in the following pages, it will be seen, though all on is seldom of Morocco. With a few exceptions it is entirely of foreign origin: the Moors have contributed little of it. The struggles of the Christian powers to establish or retain a footing in the empire form the theme of much of the early writing, and to this the English occupation of Tangier (1662–1683) added not a little of some historical interest. The synchronous efforts of the Spanish friars to extend the realm of the church date from about the same period, so far as its more heroic chronicles and martyrdoms are concerned.

But up to the year 1820, the largest share of the information which we possess about Morocco was derived either from Christian captives who had been "taken" and held in slavery of the most grinding description in Fez, Mekenes and other inland towns, or from the narratives of the envoys sent to ransom these unfortunates. Many of these slaves' narratives are of extreme value, and all of them full of pathetic interest. Some seem to have passed through the hands of Grub Street, the parish parson, or the rural schoolmaster. But the majority bear evidence of being chap-books hawked round the country for the benefit of the returned mariner, and as such, few of them have escaped the rough usage of their original purchasers. At that date there seems to have been a much more general interest in Morocco than at present. Many of the narratives in question went through several editions, and most of them were translated into languages which now-a-days take no cognisance of much more important works on Barbary. Several indeed, e.g. Nos. 295, 307, &c., were reproduced in different forms, and in two and three rival editions (Nos. 241, 284, &c.). Add to this the undoubted fact that works on Morocco, and the adjoining states, as well as on Africa generally (No. 239, 246), were issued in a style and at a cost which no publisher would venture on in these times, and some idea may be obtained of the wide-spread eagerness there was in the seventeenth and the earlier parts of the eighteenth centuries to obtain information regarding an empire over which the world at the close of the nineteenth century is much more callous.

This may, no doubt, in part be accounted for by the less general knowledge at that date of foreign languages, necessitating translations of works now read in the original. But it does not explain their being read at all. The truth seems to be that in an era when Sallee Rovers lay under Lundy Island, and had to be anxiously looked for anywhere between Sicily and the "Gut of Gibraltar," a great many people had relatives in bonds among the Moors; apart from the fact

that when two or three hundred slaves (No. 342) were rescued at one haul, and collections were made at the church doors for the ransom of others still in servitude, an ever fresh concern was kept up regarding a country which, happily, has for several years lost that doleful interest for Europe.

Few of the slaves' narratives add much to our knowledge of the topography of Morocco. Those of Marmol (No. 69), Mollette (No. 295), and Pellow (Nos. 366, 1945), are exceptions, though the geographical value of the last has been only recently acknowledged. As the routes of the Redemptorist Fathers, and the other Religious Orders who charged themselves with the ransom of the Christian captives, were the most direct from the coast to the capitals, and were therefore the same pursued by the secular envoys employed on similar missions, they opened up little of the country. Nor were their narratives, as a rule, of any scientific value, being generally full of great laud to their own order, and of maledictions against "false Mahound," his followers in general, and those of Morocco in particular. Those of Desmay (No. 294), De Vries (No. 298), Dan (No. 299), Busnot (No. 330), and that of the Religieux de l'Ordre de Notre Dame de la Mercy (No. 341), are, however, exceptions; for they contain valuable information regarding the condition of the country at the periods to which they relate. Those issued by the ambassadors sent to treat with the Moorish sovereigns are nearly all of importance, though, for the reasons mentioned, they did not extend our knowledge of the geography of the country much beyond the routes from Tangier and Tetuan or Rabat to Fez and Mekenes, or from Saffee—which was the usual port for striking into the interior (Mazagan being then in the Portuguese possession and Mogador not existing) to Merakish. The envoys and their suites, nevertheless, collected — as they still collect—a great deal of information regarding the country, its inhabitants, its rulers, and the renegadoes who, up to a very recent period, formed a remarkable element in the population,—all of as much value now as when it was published. Of the early diplomatists' narratives, the most notable are Nos. 72, 157, 181, 186, 245, 312, 313, 342, 349, 384, 411, 512, &c..

In the intervals of piracy the English Government and the Sultan would occasionally become so friendly that His Shereefian Majesty would ask the Gibraltar authorities to favour him or his family with medical advice. To such courtesies we owe the important narrative of Lemprière (No. 449), who went to Tarudant, and the much less valuable works of Curtis (No. 480), Buffa (No. 503), and Beauclerk (No. 553).

The experiences of castaways on the shores of the Sahara, in the province of Sus, or immediately south of it, have, from the time of Paul Imbert, who, in 1630, had the misfortune as a slave to be the first European to visit Timbuktu, to Camille Douls who, after being rescued from his voluntary captivity, risked and lost his life in a second venture in the same region, form a distinct feature in the literature on Morocco.

The numerous treaties made with the European Powers are also of value, but less from a geographical than a historical point of view.

The Consular Reports of our day—as did the less widely published ones of a former era—constitute most valuable sources of information regarding, not only the ports to which the writers are accredited, but on the country at large, and some of the best works on Morocco—Höst's (No. 422), Chenier's (No. 435), Schousboe's (No. 480), Jackson's (No. 501), Gråberg di Hemsö's, Drummond Hay's (No. 650), and Beaumier's (Nos. 871, 997, 1031–1033, &c.), are to be credited to foreign representatives of former times.

Merchant adventurers very early found their way to Morocco, and to their correspondence may be traced not a little of our early acquaintance with the country, though they seemed to have been rather jealous of communicating any particulars which might prompt too many rivals to seek their fortunes there. The earliest news of these pioneers is furnished in James Aldaie's letter to Master Michael Locke concerning the "traffique . . . begun in the yeere 1551 with a tall ship called the *Lion* of *London*," Aldaie claiming to "haue bene the first inwenter of the trade" (No. 47). Nor must it be forgotten that it was the "briefe relation" of "Laurence Madoc," an English merchant in Morocco, to Anthony Dussel of London (No. 99), which gave Europe the first intimation of the conquest of Timbuktu, and other of the Niger cities, by Juder u Zergu, the general of Mowlai Ahmed II. Roland Fréjus, of Marseilles, who, in the year 1666, made a journey into Morocco for the purpose of establishing commercial relations with that country, has left a very interesting account of his travels (No. 248) to which is usually attached a series of answers by "M * * * *" [M. A. Charrant], a French merchant who had lived twenty-five years "dans la Mauretanie." As a contemporary record, written evidently without ulterior motives, these replies to queries put to him are priceless.

Travellers who tried to explore Morocco in disguise have never, with perhaps one exception, done much; for whatever they might flatter themselves into believing, they were invariably either suspected or detected, it being next to impossible for any foreigner to avoid solecisms in manners, language and accent, which would at once reveal his true character to the suspicious natives, and naturally lead to unpleasant conclusions regarding the objects of a man trying to penetrate the country by stealth. Roentgen, Davidson and Douls were murdered, despite their affected Moslem conformity. Ali Bey el Abassi (Domingo Badia y Leblich, No. 506), passed muster as a Turk for a short time only. Gerhard Rohlfs (Nos. 1030, 1142), though tolerated as a renegade and a protégé of the Sultan, and the Sherif of Wazan, never really imposed upon any one interested in discovering his true character. Moreover, having to travel without the means of making accurate observations, his narrative is full of serious mistakes. The Kaid Ismail (Joaquin Gatell, a Spaniard, No. 1043, 1044) was not much more successful, although he did add something to our knowledge of the South, while the

journeys of El Haj Mohamed el Bagdady (José Maria de Murga, No. 1254) were of limited geographical value. The Viscount de Foucauld, who (No. 1841) travelled in the guise of a Morocco Jew, brought back the most abundant crop of notes of all who have adopted this perilous mode of exploration. More recent imitators need not be mentioned, since it is notorious that their "disguises" were in their own imaginations alone: their foibles were simply humoured.

With the exception of the works of Schousboe, Ali Bey, Jackson, Keatinge, Caillié, Gråberg Di Hemsö, Washington, Brooke, Davidson, and Hay, the first forty-five years of this century were not fruitful in important contributions to the literature of Morocco. The difficulties with France in 1844 gave an impetus to many pens, the most valuable results of which are Nos. 672, 678, 680, 681, 683, 698, 699, and 706. This spurt lasted with little intermission until the Spanish war of 1859–60 brought numerous eyes to bear upon Morocco, imparted to it an interest it had not possessed since the abolition of piracy and Christian slavery, and led to the issue of books and papers the titles of which occupy some nine or ten pages of our "Bibliography." It will be seen that this literary renaissance has never died away. For with the exception of the year immediately following the conclusion of peace, the printed matter on Morocco has continually increased in number and, as a rule, in excellence.

The close of the Spanish war opened a new epoch in Moroccan history. It taught the Sultan and his people the peril of molesting "Christians," and compelled them to tolerate the tourist, who had by this time begun to direct his enterprise to the interior, previously visited almost solely by envoys and other privileged persons. By "tourist," must be understood not only the invalids and idlers who now throng Tangier during winter, the sportsmen who slay partridges and wild boars, the little stream of regulation "trippers" who ride along the coast and over the Andjira headland to Tetuan and Ceuta, and even reach Wazan and the capitals, but travellers of a more scientific status also.

One of the earliest, if not the very first person who visited Morocco without being engaged in official business, was Nicolaes van Diest Cleynærts, or Clenardus, who in 1535 resided in Fez for the purpose of studying in a city then still the home of many learned men. This was fifteen years before the publication of Leo the African's work (No. 45), which until comparatively recent times—and even yet for some parts of the country—was our chief authority on Northern and Central Africa. Hence the unavailing regret that Clenardus did not leave behind him some record more substantial than the "Epistolæ Elegantissimæ" (No. 48). The famous Captain John Smith of Virginia, though he went to Morocco in search of military service (which he did not obtain), was, in a way, one of the earliest of Barbary tourists, and has put on record some curious particulars which show that in those days (1604) there were not only numbers of English artizans settled peacefully in the city of Morocco (Merakish), where there have been none for many ages, but that the English pirates, when driven out of the European seas,

settled on the North African coast and taught their trade to the Moors (No. 173). At that time it was not considered disreputable to enter the Sultan's military service, the Pope even giving his countenance to the Christian knights in the pay of the kings of Morocco as early as 1290 (No. 973).*

William Lithgow, the Scottish traveller (No. 142), visited Fez in 1617 with Monsieur Chatteline, a French lapidary. However, soon after this, the tension between the Moors and the Christians—owing in part to the expulsion from Spain, but mainly from the bitterness inspired by the cruelties mutually practised on their respective captives, and, perhaps, also owing to the barbarism which the civil wars had brought about—grew so extreme, that with the exception of envoys and the Redemptorist Fathers, we do not hear of any unofficial travellers in Morocco. Even merchants do not seem to have traded to Fez, Mekenes, Merakish, and Tarudant as they did a century or two earlier.†

When Christian slavery and piracy came, nominally at least, to an end, the late Sir Arthur de Capel Brooke was one of the first Englishmen who visited the country (1829–1830) for pleasure. He failed to obtain permission to make the Fez journey; but he was the virtual discoverer of the remarkable monolith of El Uted (No. 570). Baron von Augustin (No. 606) and the Prince Wilhelm zu Löwenstein (No. 709), followed a few years later. But the day of the tourist and the winter resident began after the Spanish War, and though very few of these stray travellers have added much to our knowledge of the country, their oft-times brightly written but sadly inaccurate volumes have done much to attract better trained explorers, among whom the names of Admiral Washington, who, fixing some of the principal geographical points as early as 1830, may be termed the pioneer of scientific visitors, the Rabbi Mordokhai of Akka (a native Jew, who visited and resided for several years in Timbuktu), Hooker, Ball, Maw, Chavagnac, Mourlot, Bleicher, Colville, Watson, Rein and Fritsch, Irby, Drake, Reid, Payton, Tissot, Lenz, de la Martinière, Quedenfeldt, Duveyrier, Hildyard, De Foucauld, Thomson, and Harris deserve honourable mention. The officers forming the French Military Mission attached to the Sultan's army might have added vastly to our knowledge of the country. But, whatever may be the private reports in the pigeon-holes of the French war-office, the work of Captain Erckmann (No. 1622) is as yet about the most important result vouchsafed to the outside world.

* On this subject, in addition to the references given, consult Lithgow (No. 142) and Lady Verney's 'Memoirs of the Verney Family,' vol. i., pp. 63–68, where will be found some account of Sir Francis Verney, who, with Captain John Giffard and eight other Englishmen took service with Moulai Sidan, and is believed to have turned pirate.

† Roger Bodenham, one of the first Englishmen who reached Mexico (1564–65?) mentions that before sailing to "New Spain" he had grown "to great loss and hinderance by that new trade begun by me, in the city of Fez." This was long before the establishment of the French Consulate of Fez (No. 74), or the granting by Queen Elizabeth of her charter to the Exeter Company of Barbary Adventurers (1585).

The year 1881 is a notable one in the literary history of Morocco. For in that year the first printing-press was set up in Tangier by Mr. Abrines, an English subject. This was followed by the issue on the 28th of January, 1883, of 'Al-moghreb Al Aksa,'* and soon after by a legion of tiny sheets in French, Spanish, Arabic, Hebrew and English, most of them very deservedly short lived, and seldom containing any papers of permanent geographical value, though all of them are necessary to the future historian of Morocco.

A list of these † has been embodied in our pages, with a reference to some of the more important contents. No attempt has, however, been made, unless in the case of articles of exceptional importance, to catalogue mere newspaper articles, reports, and correspondence of an ephemeral character, nor to recatalogue maps and manuscripts which have already formed part of special bibliographies. But, with these exceptions, as far as any digest can be exhaustive, it has been our endeavour to make this complete. If there are any blanks, they will perhaps be found in the continuity of periodical publications, which like some foreign consular and diplomatic reports, are not issued with undeviating regularity. At the same time, we believe that nothing of importance has been overlooked. Nearly every publication has been seen by us or by friends in whose judgment the fullest confidence can be placed, and no title has been admitted which has not satisfied this test except where the authority, Renou (No. 706), Duro (Nos. 1254, 1299), or De la Martinière (No. 1910), has been given. In these cases it must be understood, that though not in doubt as to the existence of the work, we have not been able to see it. This, however, has not frequently occurred, though all of the literature here chronicled is not to be found in any single library. For many of the publications we may in vain search the English libraries, and several are, if not unique, not known except in the private collection of one of the compilers.

In conclusion—and it is the last word to the last of the Barbary Bibliographies—we could scarcely have hoped to make a list which may save much useless labour to future investigators, so complete as it is except by the help of colleagues and correspondents. Among those who pre-eminently deserve the thanks of the compilers for the unwearied care they have bestowed on the tedious work of searching libraries and revising proofs, where every title is a little treatise and every line and even every word a fact, the names of Mr. Consul H. E. White of Tangier, Mr. Consul Payton of Mogador, M. René Basset of Algiers, M. Castelot and M. J. E. De la Croix of Paris, Professor Rein of Bonn, Mr. Budgett Meakin of Tangier, Fröken Rudmose of Copenhagen, Miss Drummond-Hay, Mr. Frederick Whymper, Dr. R. Spence Watson of Newcastle, and the French and German Consuls in Tangier, must be gratefully remembered.

* Actually, however, the 'Eco de Tetuan' appeared for a few months during 1860 in the Spanish camp at Tetuan.

† By Mr. Budgett Meakin of Tangier.

Morocco is still the most barbarous, the most backward, the most unchanging of all the countries with which we maintain diplomatic relations. We send our envoys to Tangier, but Mowlai El Hassan does not reciprocate the compliment. The magnificent resources of his vast realm in soil, mines, and valuable timber, are undeveloped, and most of the country is still as primitive as it was when the Arabs entered it. Yet, though it will for many years to come, even if freely opened up to European travellers, form a fruitful field for the minute geography of the future, it is advancing, and the literature on it shows a remarkable improvement over that which appeared even ten or fifteen years ago.

Much unwisdom about this region has appeared—and, no doubt, still appears—in print. But no one could now write of it as did Tasso* even after the publication of Leo's work in Ramusio's 'Itinerario':—

> "E costeggiar di Tingitana i lidi,
> Nutrice di leone e d'elefanti;
> C' or di Marocco é il regno quel di Fessa."

This information must have been derived from Pliny, or is an echo of the "leonum arida nutrix" of Horace. For the elephant has not inhabited Mauritania for many a century; and Morocco, so far from being the nurse of lions, is now so poor in the king of beasts that it is possible to roam the land for a lifetime without seeing one.†

* 'Il Gerusalemme Liberata,' l. 58, c. 21.

† "Stoke," the Indian elephant presented to the Sultan by Queen Victoria in 1889, is at present, perhaps, the only specimen north of the Sahara.

A BIBLIOGRAPHY OF MOROCCO,

FROM

THE EARLIEST TIMES TO THE END OF 1891.

By Lieut.-Col. Sir R. Lambert Playfair, K.C.M.G., etc.

AND

Dr. Robert Brown, M.A., F.L.S.

(*Map p.* 476.)

1. B.C. 520 (*circa*). **Hecatæus of Miletus.**

All the writers before this date were mere speculators or poets, whose geography, like that of Homer, may be regarded as purely mythical. The island of the Lotophagi may be,—perhaps is,—the modern Jerba off the coast of Tunis; but his Atlas has nothing to do with the mountain range of that name. Hecatæus, however, enables us for the first time in ancient literature to touch solid ground, fragmentary though the literary relics which have come to us undoubtedly are. He seems to have been a traveller himself, and a diligent, though not always critical, collector of travel tales.

He mentions, in Barbary, the Mazyes and Zygantes, tribes living near the Tritonian Lake, and the same as those subsequently referred to by Herodotus as the Maxyes and Gygantes. He knew Metagonium, near the Pillars of Hercules, perhaps Cape de l'Agua (Ras Sidi Beshir), if this was the same place which Strabo knows under this name, and Thinga, or Tinga, or Tingis (the modern Tangier). It is also not improbable, as Sir Edward Bunbury suggests in his admirable 'History of Ancient Geography' (vol. i. p. 144), that his river Liza was identical with the Lixus of later geographers, though this name was so vaguely applied that the question must remain a moot one. The fragments of the Περιήγησις τῆς Γῆς of Hecatæus have been collected by Klausen ('Vita Hecatæi,' 8vo, Berlin, 1831), and reprinted by C. Müller in his 'Fragmenta Historicorum Græcorum,' vol. i. (Paris, 8vo, 1841). His life and writings are discussed in Col. Mure's 'History of Greek Literature,' vol. iv. p. 145 *et seq.*; London, 1853.

Hecatæus is frequently quoted by later grammarians, particularly by Stephanus of Byzantium, in whose writings Col. Mure has detected 300 out of the 330 fragments collected by Klausen, mostly mere names. He ought not to be confounded with Hecatæus of Abdera, who is perhaps the writer whose authority for the Northern ocean being called "Amalchian" is cited by Pliny ('Historia Naturalis,' lib. iv. 13, § 94).

2. B.C. 470. **Hanno the Carthaginian.**

How far Hanno sailed down the west coast is a disputed point among the commentators. Gosselin ('Recherches sur la Géog. systématique et positive

des Anciens,' vol. i. pp. 70–106) refused to believe that he reached further than Cape Nun, an utterly untenable view, which was adopted by Walckenaer ('Recherches sur la Géographie de l'Afrique,' p. 362). Rennell and more modern writers, including Mr. Griffiths, the late Colonial Secretary of Sierra Leone, were inclined to put Sherboro' Sound, just south of Sierra Leone, as his southern limit. It is certain that there are no rivers north of Cape Nun—in Morocco—which contain crocodiles and hippopotami, far less "the hairy men and women" to which we still apply his name of "Gorilla," perhaps the sole Punic word which is as familiar in London as it was in Carthage, though the apes he saw were more probably chimpanzees. But it is not quite so certain that the river was the Senegal. Too much importance must not be attached to Hanno's description of the "streams of fire" and the "pillars of fire" which he saw in passing down the coast. They might have been bush-fires, the negroes still igniting the long grass in the autumn, signals to give warning of strangers' approach, or volcanic eruptions. If so, no part of the country about either Sierra Leone or Senegal had a volcano within historical times. But there is no range here fit to be called Θεῶν Ὄχημα—the "Chariot of the Gods"—which Ptolemy more accurately places on the site of the Cameroons Peak, and there is no Νότου Κέρας, or Horn of the South, capable of being identified with Sherboro' Sound. Accordingly, Sir Richard Burton ('To the Gold Coast for Gold,' vol. i. p. 311) is probably right in thinking that we must extend Hanno's voyage to Corisco, in the Bight of Benin. But there is no doubt as to his geography of Mauretania. After leaving the Straits of Hercules (Gibraltar), they sailed for two days and founded a colony at Θυμιαθήριον, which must be near the site of Sallee or Rabat, and is perhaps Mehedia. Mr. Budgett-Meakin suggests the now deserted town of Tit, near Mazagan, as the site of this settlement. Then they came to the headland of Soloeïs—Σολόεις ἄκρα—where they erected a temple to Poseidon (Neptune). This promontory is usually identified with Cape Kantin, though that headland is nowadays not λάσιον δένδρεσι; it is in fact bare of trees. M. Vivien de Saint Martin ('Le Nord de l'Afrique dans l'antiquité,' p. 363), unaware of this fact, was struck with the correspondence of the old Carthaginian admiral's account with modern realities. For he tells us—as no doubt some imaginative person had told him—that the Moors still call the promontory Ras el-Hadik, the Cape of Palms. In reality there is not a palm anywhere near it, except a few close to a Mussulman sanctuary, now in ruins. M. Tissot assures us that the name Ras el-Hadik is absolutely unknown to the natives, as well as the meaning applied to the term. The Cape is called Ras Kantin. That word, M. Tissot thinks, is applied in the same sense that the Punic word Soloeïs was; since it seems to be used to designate (in the singular) one of the most remarkable cliffs of the Riff—namely, the Ras Kant ez-Zit. Mr. Consul White of Tangier, however, points out to us that Cape Kantin is spelt with a ك, whereas Kant-ez-Zit begins with a ق. As it is difficult to effect a landing on this dangerous coast, it is probable that Hanno's men disembarked near where the fishing hamlet of Bedduza now stands. After half a day's voyage they came to a large lake or marsh. No such place now exists, the lagoons which characterize the coast of Morocco being all to the north of Cape Kantin. South of it the shore is either guarded by cliffs, steep slopes, or stony and sandy beaches. Nor is there any sign of such a lake or marsh having existed; and the sudden winter rains which make every dry watercourse roar from bank to bank, are

not of a character fit to cause floods likely to be mistaken for a marsh or lake. Saffi is, however, the spot near which we must look for the locality described by Hanno. Unless, therefore, he mixed up his facts, or they have been blundered in transcription by his historians, it is allowable to believe that the coast level has altered in the course of twenty-three centuries. Of this indeed there is ample evidence. From Tangier to Mogador there are old sea-beaches at the height of from 40 to 70 feet, and the lagoons north of Rabat are distinctly due to an elevation of this kind. There may have been sinking also; in which case Saffi Bay would in Hanno's day have been a marsh, lake, or lagoon, and the Tensift river-mouth an estuary. The herds of elephants and other wild animals surrounding it are less difficult to understand, since these animals, though not now found north of the Sahara, were even in Pliny's day—more than 400 years later—abundant in the forests of the Atlas. After leaving this lake the Carthaginians founded five coast towns,—Caricon Teichos, Gytta, Akra, Melitta, and Arambys (Καρικὸν Τεῖχος, καὶ Γύττην, καὶ Ἄκραν, καὶ Μέλιτταν, καὶ Ἀραμβυν), which we now try in vain to identify, unless, indeed, Arambis is Agadir, a Berber word meaning a protecting wall. It is, however, applied to several other places. The full name of this one is Agadir-Igir. A large river called Lixus (Λίξος) was their next halting-place. This is, of course, not the Lixus of later geographers (namely, the modern El-Kus). It is probably the Sus River, or the Draa. The people on its banks were herdsmen, and friendly; but the interior, according to these Lixitæ, was an inhospitable land, full of wild beasts, and intersected by high mountains, in which the river rose, and the Troglodytes or cave-dwellers lived. The mountains he might easily have seen for himself, since a spur of the Lesser Atlas reaches the sea at Agadir, and on a clear day, as one of the compilers of this 'Bibliography' (R. B.) can vouch from personal experience, near Cape Cantin the snowy peaks of the Great Atlas can be seen from the deck of a ship. Cerne, the island where they established a settlement which continued for a long time, was perhaps Kerne, in a deep bay at the mouth of the Rio de Ouro, where the Spaniards have recently established themselves: since apart from the fact that it is much too far north, there is no island near Agadir, where it has been fixed by some commentators (Müller, 'Geogr. Græci Minores,' vol. i.: Prolegomena, p. xxvi.). Hanno's 'Periplus' has been the theme of investigation by Bochart, Ramusio, Dodwell (who doubts its authenticity), Falconer (who successfully defended it), Bougainville, Gosselin, Hudson, Rennell, Chateaubriand, Schmidt, Heeren, Bayle, Kanngiesser, Quatremère de Quiney, Walckenaer, Ukert, St. Martin, Major, Bunbury, Campomanes, Mauroy, Tissot, Kan, Judas, Tauxier, Maurique, Göbel, Mer, Robson, and others. But the edition of Müller just cited supersedes all others. The "Περίπλους" was first printed by Frobenius at Basle in 1533, from a MS. in the Heidelberg Library. If Hanno (Ἄννων) was the son of Hamilcar, who led the Carthaginian expedition against Sicily in 480 B.C., a conclusion adopted by Müller, the voyage must have been about the year 470 B.C. If, on the contrary, he was the father of that general, it was about B.C. 520. Bougainville (No. 392) however (and Vivien de St. Martin follows him), prefers B.C. 570.

3. B.C. 443 (*circa*). **Herodotus.**

The Father of geography mentions Soloeïs, a name also given by Hanno and Scylax (*q. v.*), and by them meant to be the modern Cape Cantin, but Herodotus is thought to have intended to designate by this title Cape Spartel. This is the only spot he mentions on the Atlantic coast of Morocco, and that

he seems to have heard of from the Carthaginian mariners. But he had no personal acquaintance with this region, and indeed appears to have known next to nothing of Mediterranean Africa beyond what is now, nominally, the Regency of Tunis.

The editions of his work are endless. We need only mention those of Schweighäuser, 5 vols. 8vo (Strasbourg, 1816), Gainsford (Oxford, 1840), and Stein (2 vols., 1869–71), in the original Greek. In Latin the editions of Valla (1450), revised by Heusbach (1537) and Dinstorff (1844), may be cited; and in English the best is that of Canon Rawlinson (1858–60). The Commentaries of Wheeler (1854) are useful, if read with caution. There are also translations into English by Littlebury (1737), Beloe (1791), Taylor (1829), Macaulay (1890) and Sayce (Bks. i.–iii. 1883). Lange (1811), Schöll (1855), Bähr (1867), and Stein (1875) have published versions in German. In French the best are by Larcher (1786), Miot (1822), Giguet (1857), and Talbot (1864). In Italian, Mustoxodi (1820), Ricci (1871–76), Grandi (1872), Bertini (1871–72); and in Swedish, Carlstadt (1871), are said to be respectable translations.

4. B.C. 352–348. **Scylax of Caryanda.**

He knew little of the country beyond the Pillars of Hercules. But he knew Κώτης κόλπος μέγας, which is near Cape Spartel, though we can practically identify his Πόλις ἐν ποταμῷ, a "city upon a river," as M. Tissot has hesitatingly done, with Tangier, if we accept the suggestion that old Tangier was further to the S.E. of the Bay upon what is now styled Wad el-Halk (Palate River) by the side of which the Roman dockyards, as the ruins show, were afterwards built. It is not so easy to conclude that the ποταμὸς was the Wad el-Ksar (the Wad el-Yemm of El-Bekri). His Ποντίων τόπος καὶ πόλις may be Hajeriin and Cherf el-Akab; his Κηφησίας λίμνη μεγάλη, the low ground of Mharhar and Tahaddart; his Ἑρμαῖα ἄκρα, Ras el-Kuas; and the Ἄνιδης ποταμὸς καὶ λίμνη, the inferior course of the Wad el-Aïasha. His Λίξος ποταμὸς is the El Kus (Lukkos) and the Λίξος πόλις Φοίνικων the old city of Lixus—the favourite site with many of the Gardens of the Hesperides, which, though now represented by the modern Laraiche (El Araish), has been clearly identified with the site of the wretched modern village of Shemish (Chemish), higher up El-Kus river.

The Πόλις Λιβύων, a native village, may have been where El Araish is still, at the mouth of the river, while there is little difficulty in accepting the Κράβις ποταμὸς καὶ λιμὴν as the Sebu river, one of the largest in Morocco; while his Θυμιατήρια was the same as Hanno's Θυμιατήριον—namely, Mehedia. Scylax seems to have been acquainted with the west coast of Africa as far as the island of "Cerne." Cape Soloeïs (see Pliny) he describes as a promontory standing out boldly to the sea, and having an altar to Poseidon (Neptune) on its summit. This is the Cape to which Hanno gives that name, so that Sir Edward Bunbury is perhaps justified in thinking that he derived his information about it from that navigator. At all events this part of his 'Periplus' is evidently taken from Carthaginian sources. Between Cape Soloeïs and Cerne he places the river Xion (Ξιῶν ποταμός), which is evidently the Lixus of Hanno (the Sus or perhaps the Draa), though the Lixus of Scylax is quite as clearly the El-Kus which Pliny and later geographers called by the name the Greek writer had given to it ('Periplus,' § 112). In those days there was a Phœnician town on one side of the river-mouth and a Libyan (Berber) one on the opposite shore. The best editions of Scylax are Müller ('Geogr. Græci Minores,' vol. i.,

Paris, 1855), and Fabricius (Leipsic, 1878). One of the earliest editions is 'Scylacis Caryandenis Periplo' (Oxford, 1698). See also for a discussion of various points in Scylax's voyages, Unger, 'Philologus,' 1874, p. 29 *et seq.*; Bunbury, 'History of Ancient Geography,' vol. i., pp. 384–394; and Tissot's 'Mauretanie Tingitane,' *passim*. Scylax's own account is quoted by Aristotle, but seems to have been lost at an early period, the work which goes under his name being a compilation from various fragments which had survived in the writings of other authors, over some of whom also Lethe has long since passed. Suidas confounds him with another Scylax, perhaps Scylax of Halicarnassus, the statesman and astrologer, the friend of Panætius (Cicero, 'De Div.' ii. 42) who wrote a refutation of the history of Polybius.

5. B.C. 45 (*circa*). **Sallust.**

As the friend of Cæsar, whom he accompanied on his African campaign, and Governor of Numidia, Caius Sallustius Crispus ought to have picked up, either personally or through trustworthy agents, much information regarding the neighbouring provinces of Mauretania. But he was no geographer, and the time he could spare from collecting notes for his account of the war with Jugurtha seems to have been spent in plundering the provincials of the wealth which enabled him, on returning to Rome, to lay out those famous "Horti Sallustiani" which were the wonder—and the scandal—of the Quirinal. Like Livy, whose histories are only large party pamphlets—he was proner to rhetoric than to exact data. Hence whatever might have been in his lost books, the works of Sallust which survive are disappointing to the geographer. He seems to have made some inquiries regarding the people of the interior—Gætulians and Libyans—part of whom wandered about and part lived in huts. Beyond them lived the Ethiopians, on the border of the desert burnt up by the blazing sun. The Medes, Persians, and Armenians,—masterless men, owing to the death of Hercules in Spain (so he puts it),—passed into Africa. The Persians by-and-by intermarried with the Gætulians, and formed a mixed race called Numidians. The Medes became, by a corruption of their name, Mauri ("barbara lingua Mauros, pro Medis, appellantes"). These Mauri and Numidians, uniting their forces, extended their yoke over the neighbouring races, principally the Libyans, less warlike than the Gætulians. All this happened long before the Phœnicians founded their settlements. This is the gist of the puerile fables collected and recorded by Sallust. Yet in his usual careless way he may be collecting stories which, if analysed, would fit in with known facts. The tents of the Moroccan nomads, shaped like boats turned up, are not very different from the "mapalia" of the ancient Gætulians, which, according to Sallust, originated in the Persians living under the upturned vessels for lack of any other dwellings. This word, it may be remarked, closely resembles the Barbary-Arabic word "Mahala," which means a camp or abode. Then, as Vivien de Saint-Martin points out, Ibn Khaldun mentions a tribe called Urmana, who at the time of the Arab invasion occupied part of Numidia; these may be the Armenians of Sallust. Again, the Medes are represented by the Médâça, a Berber tribe mentioned by El-Bekri, or by the modern Medaçi of Setif. Again, the Meduna are a branch of the Mézata; the Mediuna is another tribe not far from the Moluia, in that part of the old Western Numidia, afterwards known as Mauretania Cæsariensis. The Persians may be a corruption of the Pharsii, a people whose name became known after the time of Polybius, and who as the Béni Féraouçên have their

home between Bougie and Tedellis, and in the neighbouring region of Morocco. The Guechtula, between Dellys and Jurjura, have been identified with the Gætulians. Among other names in the scanty geographical repertory of Sallust (*ut supra*) we find the Mulucha—the modern Wad Muluia—mentioned as the boundary between the kingdom of Bocchus and that of the Massæsylians, a tribe who in the time of Jugurtha were looked upon as belonging to Numidia.

6. A.D. 20. **Strabo.**

Strabo knew little of this part of Africa, and that little seemed to have been derived from his predecessors. He dwells on the lions, panthers, and other wild beasts in the country, the abundance of elephants, and the rivers containing crocodiles like those of the Nile, with which he was well acquainted. He makes no mention of Juba's work, but cites Iphicrates, an author whose writings have not descended to us. The Carthaginian colony on the Libyan coast had by this time disappeared, for there was no permanent settlement further south than Λίγξ (near the modern Laraiche or El-Araish, though higher up the Kus River, at Shemmish), which he seems to confuse with Τίγγις or Tangier. The prolongation of the Atlas—Δύρις, according to the native nomenclature—throughout the whole extent of Mauretania was well known to him. The Gætulians he describes as the most important of the African nations, the Gætulians being evidently the modern Berbers under their various divisions of Shluhs, Tuaregs, etc. Among other localities mentioned by him which can be identified with reasonable accuracy are the Μολοχάθ (the Moluia); Μεταγώνιον, Cape de l'Agua (Ras Sidi Bechir); Ἀβίλη ὄρος, Jebel Belyunesh; Ἐλέφας, Jebel Musa, or Ape's Hill, often taken to be Abyle, the African Pillar of Hercules; Νησίδιον, Perigjil Island (Jezira T'aura), between Ceuta and Tangier, occupied by the British during the period of the Peninsular War, when Ceuta was held by them; while his Αἱ Κώπεις is Cape Spartel and his Ζῆλις Azila (generally written Arzila), while Ἐμπορικὸς κόλπος is, according to Tissot (with whom we agree), the curve of the coast-line between Laraiche and Mazagan.

7. 27–79. **Pliny the Elder.** 8.

Pliny's knowledge of Northern Africa from the Straits of Gibraltar to Egypt was more accurate and extensive than that of any former geographer, though he is defective in the art of arranging his ample information and in critical acumen. Beyond Sala (Shella, near the site of the modern Rabat), like most of the early writers, his knowledge was vague. He however mentions Dyris as the native name of Atlas, one which perhaps is retained in the word "Daren," or in the Idrarn of the Berbers. He complains that the accounts of the interior were most contradictory, and purposely falsified, though the forests were being ransacked for "citrus," the modern "arrar" (or Thuya, *Callitris quadrivalvis*), a wood still much valued, and the shores for the materials yielding a purple dye, this being derived, most probably as at present, from the "orchil" lichen. He speaks—or quotes Juba's MSS., to which he had access, Juba being king of all the territory to the Atlas—of the Asana river, 150 Roman miles beyond Sala. This was doubtless the Anatis of Polybius, and the Oum-er-Rbia of the Moors. The Fut of Pliny (a river mentioned by the historian Josephus as Φούτος of several Greek writers) is the Tensift. He also speaks of other navigable rivers and ports, the Tamuda, most likely the Martil (lib. v. c. ii.), of the Muluia (Malvana fluvius navigabilis), of the Mvlvcha (Wad el-Kus), of the Wad Lau as navigable (*Flumen Laud et ipsum navi-*

giorum capax), and of Rusadir (Agadir). At the mouth of Wad el-Kus near the site of Laraiche (El-Araish) he places (bk. v. c. i.) the Garden of the Hesperides, the windings of the river being the serpent which guarded the golden apples or oranges. Around ancient ruins in his day were palm groves and remains of vineyards, pointing to the existence of old Carthaginian settlements on the coast. But the most remarkable statement of Pliny is that Sala bordered on the untrodden desert which was infested by herds of elephants (animals not now extending north of the Sahara), and by barbarians (Mauri), whom he calls Autololes, "Oppidum Sala ejusdem nominis fluvio impositum, jam solitudinibus vicinum, elephantorumque gregibus infestum, multo tamen magis Autololum gente" (v. i. § 5). He describes them being taken in pitfalls, so that it is probable, coupled with what Hanno says regarding this abundance on the Atlantic shore of Morocco, the Carthaginian war-elephants were from this region. See also No. 1221. More than one semi-fossil tusk has already been found in Algeria, and others may in time be unearthed, when Morocco is examined geologically. Amandi—'Histoire militaire des Éléphants'—cites many other facts in support of Pliny's assertion, and of Strabo and Hanno's still earlier statements; and the probability of taming African elephants is discussed by M. Wauters in the *Mouvement Géographique* for May 1866. See also Bunbury's 'History of Ancient Geography,' vol. ii., pp. 429, 434. Another point mentioned by Pliny is Promontorium Album, the Punta Blanca of modern charts. The *Vior flumen*, which may be the Wad Garizim, the Wad Bueda, the Wad Auari Urah, or the Wad Es-saka.

The best editions of the original are those of Julius Sillig (Leipsic, 1831–36, in 5 vols., 12mo), and Louis Janus (Leipsic, 1854–59, in 6 vols.). But for scientific value the French versions of Hardouin (1685 and 1723), and Panckoucke and Grandsagne (1829–33), in twenty volumes, are preferable. The old edition of Philemon Holland (1643) is readable. There is also an English translation of Pliny's 'Natural History,' by John Bostock and H. T. Riley, with copious notes and illustrations, in Bohn's Classical Library, 1855–57.

8. B.C. 145. **Polybius of Megalopolis.**

From the times of Herodotus to those of Polybius (B.C. 160), little was added to our knowledge of Morocco. Polybius, however, took advantage of the Roman wars against Carthage to glean a great deal of information, and though a Greek—a hostage sent to Rome after the second Macedonian War—he was enabled through the friendship of Scipio Africanus to make a voyage along the coast of Northern and Western Africa, of which voyage unfortunately we know nothing—Strabo not even mentioning it—except from the confused allusions to it in that most confused of compilers, Pliny. Polybius, no doubt, wrote the narrative, from which his successors obtained their data, but the original is now lost. We find in the second-hand account of it the name of Lixus and the river Anatis, which may be the Oum er-Rbia. He mentions a point where the Atlas descends to the sea. This may be Cape Gir, though the distance and other means of arriving at an opinion are too vague to decide; and though his "flumen Darat in quo crocodilos gigni" can hardly be any other river than Ptolemy's Daradus—the modern Draa—there are no crocodiles in it, or in any other river of Morocco, nowadays.

The "sinum qui vocatur Sagvti" is that bend of the coast where the Carthaginians had most of their establishments—Sakharat of the Phœnicians; the "Counting House," according to Vivien de Saint Martin, or the "Gulf of

Commerce;" or as Strabo and Ptolemy translate it, Ἐμπορικὸς κόλπος. A town, Mvielacha, is placed on a promontory between the Lixus and the Subur (the modern Sebu): this, M. Tissot thinks, may be the Mula Bu Selham village on the Ez-Zerga lagoon, while the Portus Rutubis is the modern Mazagan; the flumen Sala is the Bu-ragreg, and the Portus Rissadir, Agadir.

It is permissible to guess, when all criticism is largely of this character, that the "flumen Cosenum" is the Wad Ghisser, which falls into the sea not far from Massa. The "flumen Masati Masatat" should be the Massa, and the "flumen Salsum" the Wad el-Mellah, the Salt River literally, between the Draa and Mar Pequeña, the River of Salt Water of Riley's narrative. Surrentium, if the same as Ptolemy's Soloentis, is Cape Nun, though both premisses and deductions are very feeble. Altogether the analysis of Polybius's 'Periplus' is an unsatisfactory task. The Greek geographer had evidently heard or read of Hanno's voyage, and made some false identification of his places, *e.g.* Lixus, &c. A fair Latin translation of Polybius is the 'Historiarum Libri V. Latine, ex versione Nicolai Perroti,' Rome, 1473, fol. This is the first printed edition of the Histories. It antedates the first Greek version (that of Obsopœus) by fifty-seven years. The best editions in more modern times are those of Ernesti (3 vols., 1763–64); Schweighäuser (8 vols., 1793, and Oxford, 1823); Bekker (2 vols., 1844); Dindorf (4 vols., 1866–68, 2nd ed. 1882); and Hultsch (4 vols., 1867–71). In Schweighäuser's preface a full account will be found of all the earlier versions; and in Englemann's 'Bibliotheca Scriptorum Class. Script. Græci' (8th ed., Leipsic, 1880, pp. 646–650) the literature of the Polybian commentators is amply noted. Polybius is, however, so bad a writer, that perhaps Dionysius of Halicarnassus pronounced, in the first century before Christ, the same verdict which the critics of the nineteenth after him will be ready to utter—that, having neglected the graces of style, he has left work which "no one was patient enough to read through to the end" (*περὶ συνθὲς ὀνομάτων*). From this sweeping dictum his translators must, however, be excluded; and among them are, in English, Watson (1568), Edward Grimestone (1634), Henry Shears (1693), Hampton (1756), and above all the celebrated Sir Walter Raleigh, whose posthumous version of the war between the Carthaginians and the mercenaries was issued in 1647.

9. 41. Mela, Pomponius.

As a native of Southern Spain, Pomponius Mela was naturally familiar with the Strait of Gibraltar. His birthplace was, he tells us (and that is about all we know of his personal history), Tingentera, probably the native name of the place called by Strabo, Julia Traducta, which had been peopled by colonists transported thither from Tingis (Tangier) in Mauretania. Mela himself says that Tingentera was inhabited by Phœnicians brought over from Africa. It is not unlikely now covered by the modern Tarifa, still, though from other causes, the most Moorish of all the towns of Andalusia.

He describes Calpe (Gibraltar) and Abyla (Ceuta, or perhaps Apes' Hill) as the two Pillars of Hercules, and shows himself perfectly familiar with the Caves of the former rock. His statement that the Strait is 10 miles broad at its narrowest is almost correct, for the distance between Tarifa and Alcazar Point is 9¼ geographical miles, Gibraltar and Ceuta being separated by 12 miles of sea. He notes the semi-isolation of Calpe; was well acquainted with the Promontory of Juno (Cape Trafalgar) on one side, and that of Ampelusia (the Koteis—Αἱ Κώτεις—of Strabo, the Cape Spartel or Ras

Ashkar of moderns) on the other. But, as M. Tissot has pointed out, it is doubtful whether his "specus Herculi sacer" was really the caverns now known as the Caves of Hercules in that headland. These are chiefly the work of men, excavating millstones. But in the Jebel Ashkar there are some natural grottoes, which more closely correspond to Mela's description.

Among other places mentioned by him are *Mulucha amnis* (the Muluia), the *Septem Fratres* (Ceuta), *Mons præsaltus* (Jebel Musa or Apes' Hill?), the *Zilia fluvius* (the Wad el-Halu), Zilia (Azila), *Lixus flumen* (Lukkos or El-Kus), *Lynx* (Shemmish), and *Sala urbs* (Shella). See No. 43.

10. 160. **Ptolemy.**

From the time of Pliny to that of Ptolemy, though all the time the Romano-Greek armies were making history, and the Roman and Greek colonists civilizing, no writer arose who thought fit to collect the data which must by that time have been abundant regarding all parts of Northern Africa, including Morocco. The writings of Dionysius Periegetes, Tacitus, and Marinus Tyrius, though abounding in particulars regarding other parts of the Empire, add little to our acquaintance with Mauretania Tingitana. Claudius Ptolemæus of Alexandria, however, embodied in his famous work a vast amount of knowledge, more detailed and more accurate than that of his predecessors, and, as Dr. Schlichter has shown, even for the more distant parts of Africa, more in accordance with modern information than could have been expected (Proc. R. G. S. 1891, p. 513).

In Morocco he accurately describes Cape Gir as a prominent headland formed by a spur from the main chain of the Atlas, and places the Subu (Σούβου ποταμοῦ ἐκβολαί) in almost the position of the Sus River; and though his positions and relative distances are usually very far out, he shows familiarity with most of the settlements on the coast, on either side of Cotes (Κώτης ἄκρον) or Cape Spartel (the Ishbartel of El-Bekri). His Daradus (Δάραδος) is no doubt intended for the Draa, though he places its mouth much too far south; Arsinarium from the context—we agree with Sir Edward Bunbury—in regarding as Cape Juby, and Rissadium as Cape Bogador. This, however, from his loosely fixed positions is merely a choice between an identification which is not satisfactory and one which is most unsatisfactory. But that his Daradus is the Draa is clear enough. This river, it may be recalled, was most probably the Lixus (Λίξος) of Hanno, the Λιξ of Scylax, and the Darat of Polybius. His Τίγγις [ἡ καὶ] Καισαρεία is even more indisputably Tangier. Ζιλεία ποταμοῦ ἐκβολαὶ is, according to Tissot, the Wad el-Halu (the Wad Azila of El-Bekri); Ζιλία ἡ Ζιλεῖαι, Azila; Λίξ ποταμοῦ ἐκβολαί, the El-Kus (Lukkos); Λίξ πόλις, Shemish; and Σάλα ποταμοῦ ἐκβολαί, the Bu-ragreg, a river which flows into the Atlantic between Salli and Rabat. Σούβουρ M. Tissot regards as possibly Mehedia; in which case Σούβουρ ποταμοῦ ἐκβολαὶ must be the Sebu (Ptolemy's). Σάλα πόλις is of course old Shella, near which the modern Rabat (Rabat el Fatah, "the Camp of Victory") is built. Δούον ἢ Δύον ποταμοῦ ἐκβολαὶ is the Wad el-Melah or the Wad el-Kantara, while his Ἄτλας ἐλάττων ὄρος describes the hills between Dar el-Beida (Casablanca) and Azimur. M. Tissot, among other doubtful identifications, considers Cape Gir or Ras Aferni not the Ἄτλας μείζων of Ptolemy, seeking this point in one of the last summits of a great Atlantic range, which, under the name of Jebel Ida n' Tênan, reaches the sea between the Wad Tamrakt and Agadir. The Wad Merzek is the Κούσα ποταμοῦ ἐκβολαί, the Omm-er-Rbia the Ἀσάμα ποταμοῦ ἐκβολαί. Mazagan (the Jadidah of the Arabs, the name

El-Brija commonly given as the native one being unknown to them, and is perhaps the European corruption of "Borjah," a battery or fortified place) is Ῥουσιβὶς λιμήν, unless Tit occupied this site. Διοὺρ ποταμοῦ ἐκβολαὶ is Waladia; Ἥλιου ὄρος Cape Kantin; Μυσοκάρας λιμὴν Saffi; Φθοῦθ ποταμοῦ ἐκβολαὶ the Tensift, and Ἡρακλέους ἄκρον (we have seen) Ras el-Hadid. Ταμούσιγα is usually accepted as the site of Mogador (the Souera of the Arabs), and Οὐσσάδιον ἄκρον Cape Sisn (Ras Tazrult); Σούριγα may be Kubia, on the Wad Tidli (?); Οὔνα ποταμοῦ ἐκβολαὶ the Wad Iguzul (or perhaps the Wad Tafetna), and Ἄγνα ποταμοῦ ἐκβολαὶ the Wad Beni Taner, though it is open to discussion whether Σάλα ποταμοῦ ἐκβολαὶ is in the Wad Tamrakt. The Wad Messa may be the Μάσσα ποταμοῦ ἐκβολαί; but whether the Σάλαθου ποταμοῦ ἐκβολαὶ and a number of other streams mentioned by Ptolemy can, as M. Tissot imagines, be identified with the Wad Garizim, Wad Bueda, Wad Auari Urab, Wad Es-saka, etc., are questions which we are not prepared to answer in the affirmative, quite so readily as this admirable commentator.

Turning to the Northern Coast, we find the Μαλούα ποταμοῦ ἐκβολαὶ to be the Wad el-Kus, or perhaps the Wad el-Ajerud; and the Μολοχὰθ ποταμοῦ ἐκβολαὶ the Muluia, which, though not the political boundary between Morocco and Algeria, is in the Arab nomenclature the limit between Maghreb-el-Aousat and Maghreb el-Aksa, the "Morocco" of Europeans. Μεταγωνίτης ἄκρον is Cape el-Agua (Ras Sidi Beshir), Ῥυσσαδεῖρον Melilla, Συστιαρία ἄκρα the Cabo Tres Forcos or Ras Hurak, or other point in this vicinity. Ταινία Λόγγα is the Marsa Tagaza, the Tikisas of Edrisi; the Ὀλεαστρον ἄκρον, Point Adelau or Ras Maked. Θαλοῦδα ποταμοῦ is the Martil (the Tetuan river, the Wad Mejedksa of El-Bekri). Ἰαγὰθ is Ras et-Terf to the south of Cape Negro; Φοίβου ἄκρα is recognised as Punta de Castillejos or Ras el-Fnidek; and Ἀβύλη στήλη, Monte Acho, the culminating point of the Sierra d'Almena in the peninsula of Ceuta. Ἐξιλίσσα is Marsa Dennil; Ἑπταδελφοὶ ὄρος is less satisfactorily identified with the Jebel Belyunesh, or rather Bermeja Point, the Ἄκρα Ἀβιλυκὴ of Scylax; and not to enumerate the many other localities less certainly identified by Tissot and Vivien de St. Martin (from whom M. Tissot generally differs), Οὐαλωνος ποταμοῦ ἐκβολαὶ is the Wad el-Ksar, the Wad el-Yemm of El Bekri. With the interior of Morocco Ptolemy displays little acquaintance. But he knew of Οὐολομβιλις (Volubilis), Δίουρ ὄρος (Jebel Zerhoun), Πυῤῥὸν πεδίον (the Plain of Morocco), Βάνασσα, Τοκολοίδια, and Βάββα (see No. 11). Ptolemy's Geography was first printed in a Latin translation in 1478, but the Greek text did not appear until 1533, when it was edited by Erasmus. Of the many editions which have been published the best are those of Wilberg and Grashof (4to, Essen, 1842, never completed); Nobbe (3 vols. 18mo, Leipsig, 1843); and Müller's Latin version in Didot's 'Bibliotheca Classicorum Græcorum' (Paris, 1883). The commentators have given rise to quite a Ptolemaic literature. Most of this will be found referred to in Schlichter's paper (l. c.); in Bunbury's article in the 'Encyc. Brit.,' 9th ed. vol. xx., pp. 91–96, and in the works of Vivien de St. Martin and Tissot already quoted. See also Justin Winsor's Bibliography of Ptolemy's Geography (1462–1867), Harvard University Bulletin, Bibliog. Contributions, No. 18. 8vo. (1884), pp. 42.

11. 211. **Antoninus Augustus.**

Of all the Itineraries or Road-books made for the use of the Roman armies, which have descended to us the most important is that which bears the name of Antoninus. It is evident from this fact that it was either compiled or

improved in the reign of one of the Emperors of that name—most probably the infamous despot commonly known as "Caracalla" (211–217)—and revised at later dates; so that, as Wessling, Parthey and Bunbury hold, in the form we know it, the 'Itinerarium Provinciarum Antonini Augusti' may be ascribed to the reign of Diocletian (284–305). Its almost invariably accurate measurements enable us for the first time to fix with certainty the places named in it, and so far as Morocco is concerned this has been done with great nicety by Tissot and other commentators. Thus (on the coast) *Malva flumen* is the Muluia; the *Ad Tres Insulas*, the Chafarinas Islands, a name which is a corruption of the Arabic Jaferin, derived from the neighbouring tribe of Beni Bu Jafer; the Rvssader Colonia is Melilla the *Promontorium Rvssadi*, Cabo Tres Forcas (Ras Hurak); and the *Promontorium Cannarvm*, Point Abdun (Ras Sidi Aissa Umats), and not Cape Quilates, as Mannert decided. The *Sex Insulæ* must be looked for in the Bay of Alhussemas (El-Mzemma). *Parietina* was in the creek of Alcala, and *Cobvcla* in the Fishers' Cove (Pescadores), known to the Moors as Marsa Uringa, the outlet of a considerable river, the Wad Uringa. Ptolemy, who passes over the preceding places in silence, mentions *Tænia Longa* (Ταινία Λόγγα) of the Antonine Itinerary, which M. Tissot fixes on the Marsa Tighissa. *Ad Promontorium Barbari* is evidently Point Adalau, a corruption of Wad Lau, a name by which the natives designate a little river which falls into the bay lying to the east of that point. Its mouth is sufficiently deep to give shelter to the small vessels which come from Tetuan to load with the building timber which is found so plentifully in this part of the Riff, so that in all likelihood this—and not the Wad Nokur, according to Mannert—was the *Flumen Laud* "et ipsum navigiorum capax," which Pliny (*q.v.*) indicates as lying between two other navigable rivers, the *Tamuda* (Martil) and the *Malvana* (Muluia). We are not quite satisfied with the identification of *Ad Aqvilam majorem* and *Ad Aquilam minorem* with Ptolemy's Ἰαγὰθ and Φοίβου ἄκρα, near the modern Cape Negro (Ras et-Terf) and Pt. de Castillejos (Ras el-Fnidek), though it is better than Lapie's identification of the first-named station with Tetuan, or Mannert's with the mouth of the Martil. The *Ad Septem Fratres* of Mela and the Itinerary are to be looked for in Punta Bermeja of the Jebel Belyunesh, or practically the modern Ceuta, which, there need be little doubt, succeeded it, though M. Tissot doubts this, arguing that Ceuta (Sebta of the Arabs, and Σεπτὸν of the Byzantines) is not necessarily a corruption of the Latin *Septem*, which is the main basis for this hypothesis. But there is no doubt of Tingis being Tangier.

It is, however, chiefly for the interior of Northern Morocco that the Roman Itinerary is valuable, for it is almost our only authority for the geography of a region which by that time had got settled by military colonists. On the route from Tingis to *Exploratio Ad Mercurios*, the most advanced post of the Romans, a little beyond *Sala Colonia* (Shella, near Rabat), we find the following places noted:—*Ad Mercuri* seems to be at the village of Dar Jedid. "Almadrones," which, in dependence upon Gråberg di Hemsö, Mannert and Lapie decided to be the site, appears to be to the south of Cape Spartel, but the name (a Spanish corruption) is completely unknown in the country. Renou and Vivien de Saint-Martin placed it at the south of the mouth of the Tahaddart, which the first of these two authors confounds with the Ghrifa. At Dar Jedid (Tissot) there are the remains of what seems to have been a considerable Roman city. *Ad Novas* appears from the distance traversed to have been at or near Sidi el-Yemani; *Tabernæ* at Lella Jelaliya, where there are the vestiges of an extensive town; *Frigidæ*

at Soueïr, where there are various ruins, though these exist at several places on the route between Lixus and Banasa, and the very name is exactly translated in that of the Wad Ma el-Berda, "the cold water river." *Colonia Ælia Banasa* is proved by ruins and, what is rare in Morocco, by an inscription (Desjardins, 'Rev. Archéol.,' Dec. 1872, n. s., t. xxiv. pp. 366, 367) to have been at Sidi Ali bou Jenan on the left bank of the Sebu river. *Thamusida* is at Sidi Ali ben Ahmed, a "Kubba" or Saint's tomb, around which there are many ruins; while the *Exploratio ad Mercurios* ought, by being situated 16 miles from Sala, to be situated between the Wad Ikkem and the Wad Sherrat; no trace now remains of what was doubtless an outpost constructed like the three Moorish "Kasbas" between the Wad Ikken and Fedala, to keep in check the "Autololes" or Ait Hilala, whom twenty centuries of invaders have not taught to own a master. Another road led from *Tocolosida* to Tingis. The first-named place is doubtful: it might have been Mghila or Zarhun (Mannert), or Sidi Kassim (Lapie); but it was neither Amergo (Renou) nor Ksar Faraun (Gråberg). But Volubilis, which was a considerable city—and though Mowlai Idris (Zerhôn), and to some extent Mekenes and Fez, have been built out of it, still remains in the shape of some widespread ruins and stately arches with inscriptions—was unquestionably Ksar Faraun, "Pharaoh's Castle;" all identifications previous to those of Tissot, and it is perhaps right to say of De la Martinière also, who has of late explored many of the Roman sites with no small skill and success (though as his results are still unpublished we are unable to supply a digest of them), being erroneous, mainly owing to the faulty statements of Pliny. Even Leo Africanus, who had been educated in Fez, is very wide of the mark, while Mannert is so far from the truth, that he seeks for the Walili or Gualali of Leo on the Sebu, 35 miles from Banasa, which he identifies with Mamora (Mehedia), if indeed this was not Casablanca (Dar El-Beida) formerly called Anasa. *Aquæ Dacicæ* is most likely Ain el-Kibrit, a sulphurous spring near the summit, called Tselfat; and *Gilda*, El-Haliin. *Viposcianæ* may have been at Jebel Kort, where in the eleventh century El Bekri describes the existence of an ancient town already in ruins. *Tremvlæ* corresponds with the ruins of Basra, founded in the middle of the eleventh century, and in the time of El-Bekri so large that it had ten gates. Yet next century Edrisi describes it as at "one time" of considerable consequence: nowadays it is difficult to find more than a fragment of one rampart. Finally *Oppidum Novum* is unquestionably El Kasar el-Kebir (Alcassar), *Ad Novas* Sidi el Yemeni; while *Colonia Ivlia Babba Campestris*, off the route, may be Es-Serif. It is mentioned by Pliny, and figures as Βάββα among the Πόλεις μεσόγειοι of Ptolemy. See Nos. 71, 722, 1936.

12. 485. **Procopius of Cæsarea.**

The only passage in this historian of interest connected with Morocco is the one in which he declares that in his day there was an inscription in the Phœnician language, near Tangier, to the effect that the writers had fled from the face of the robber Joshua, the son of Nun. "Hic Populi numerosi habitavere Gergesæi, Jebusæi, aliaque habentes nomina Hebræis voluminibus memorata: qui quum in expugnabilem conspicerent advenarum exercitum, patrios fines deserentes in Ægyptum vicinam migraverunt, ibique numero ac sobole excrescentes, quum non satis commodum tantæ multitudini locum invenissent, in Africam penetravere, ubi civitates quamplures habitantes omnem eum tractum usque ad Herculis columnas tenuerunt, semiphœnicia lingua ac catalecto utentes. Oppidumque Tingen situ munitissimum in Numidia ædi-

ficaverunt, ubi duo ex albo lapide columnnæ prope magnum fontem constitutæ, in quibus Phœnicum lingua litteræ incessæ sunt hujuscemodi. Nos a facie fugimus Jesu prædonis filii Nave," etc. ('De Bello Vandalico' lib. ii. p. 222, ed. 1531). See also No. 207.

13. 920 (*circa*). **El-Istakhri**—Abi Ishak bin Mohammed el-Farisi el-Istakhri. See Nos. 612, 1062.

14. 950 (?). **Ibn Haukal**—Abi el-Kassim Mohammed Ibn Haukal. See No. 479.

15. 956. **Abu-el-Hassan Ali bin el-Hussein.** Surnamed **El-Messaudi.** Born at Baghdad; died A.H. 345 = A.D. 956. He travelled in and described many lands in Europe, Asia and Africa. See No. 436.

16. 1050 (*circa*). **El-Bekri.** See Nos. 780, 800.

Abu Obeid Abdulla El-Bekri was born in 1028 and died in 1094. His work is full of valuable information regarding Morocco.

He tells, for instance, how at the foundation of Fez (809 A.D. = 192 A.H.) a quarter was reserved for the "Andalus" or inhabitants of Moorish Spain, and another was constructed in the year following for the Kairwanees, 300 families of whom lived there at that time. The Andalusian quarter was peopled chiefly by families banished from Cordova, after a revolt under the Omirade Khalif el-Hakem ibn Abd-er-Rahman.

17. 1100. **El-Edrisi**, or Abu-Abdulla Mohammed Ibn-Mohammed ibn Abdulla Ibn Edris, generally known as Esh-Sherif El-Edrisi. He was born at Ceuta about 1100. He visited many parts of Spain, North Africa, Asia Minor, Egypt, and other Christian and Mohammedan countries. See No. 974.

18. 1100 (*circa*). **Arib of Cordova.** See No. 719.

19. 1185. **Abd-el-Wahid El-Merakoshi,** whose full name is Mahi-ed-din Abi-Mohammed Abd-el-Wahid ibn Ali Et-Tamimi, was born in Merakish A.H. 581 = A.D. 1185. See Nos. 712, 2057.

20. 1200 (?)–1259. **Matthew of Paris.**—Historia Major. Edited by Dr. Luard. 5 vols. 8vo. (1872–80.) Chronicle, 5 vols. 8vo. (Bohn's Antiquarian Library.)

The only particular relating to Morocco in this old monkish chronicler, an Englishman evidently, though either born or educated in Paris, is his statement that King John sent an embassy to Mohammed III. (En-Nasser-li-din Allah) for succour against his barons and the French, offering both to hold his kingdom of him and to embrace Mohammedanism. The Moorish Sultan, who had suffered at Sierra Morena such a defeat by the Spaniards that for several days the victors used no other fuel than the pikes, lances and arrows of their fallen enemies, answered with great dignity that he had lately read the Book of Paul's Epistles, which he liked so much that were he to chose another faith it should be Christianity. But for his part he thought every man should die in the religion into which he was born, the only fault he found with Paul being the fact that he had deserted Judaism. But as John was no friend of the monks, that may be merely a piece of monastic scandal, though, considering the many Christians in the service of Barbary during the Middle Ages and *vice versâ* (see Mas Latrie, No. 973) the story is not incredible.

21. 1211. **Ibn Khallikan.**—Ahmed bin Mohammed bin Ibrahim bin Abi Bekr bin Khallikan was born at Arbela in 1211, and wrote his work principally at Cairo. It contains the lives of distinguished Mohammedans from the Hegira till the 13th century. See No. 647.

22. 1232. **Ibn el-Wardi** (Ouardi)—Zein-ed-din Omar. See No. 443.

23. 1290. **Abu Mohammed el-Abderi.** — Rahalat el-Moghrabia, رحلة المغربية or *Occidental Itinerary.*

The author describes his pilgrimage to Mecca from Haha, one of the remotest points of Morocco.

Copies of this MS. exist in the Library of Leyden (see Cat. Codd. Orient. Bib. Acad. Lugd. Batav., vol. ii., p. 136), in the Escurial (No. 1733), in the University Library at Algiers (No. 2017), at the Mosque of Jama Zeituna at Tunis, and in the Library of Si Hamuda at Constantine. M. Cherbonneau published an account of it in the 'Journ. Asiatique,' Paris, 1854. See No. 757.

24. 1300. **Statuts Municipaux de la Cité de Marseille.**

Two chapters of these regulate the mode of election and the functions of Consuls established by Marseilles in the ports of the Mediterranean, especially Bougie and Ceuta. See 'Tab. de la Sit. des Étab. Franç. en Algérie,' 1841, p. 412. (No. 628.)

25. 1300. **Abu'lféda Ismael,** Prince of Hamah; born at Damascus, A.H. 672 = A.D. 1273; styled by the Arabs *El-Malek el-Moweiyed.* Died 1331. He wrote several works, but all that are now extant are his Geography, his History, and several pieces of poetry. See Nos. 428, 451, 613, 623, 720.

26. 1326. **Imam Abu Mohammed Saleh** bin Abd-el-Halim el-Gharnati. See No. 465, 554, 646, 871, 1523.

27. 1331. **En-Noweiri.**—Shehab-ed-din Ahmed ibn Abd-el-Wahab, surnamed En-Noweiri. Author of a great encyclopædic work. Died A.H. 732 = A.D. 1331. See Nos. 738, 631.

28. 1355. **Abu Abdulla Mohammed ibn Batuta,** a native of Tangier. See Nos. 525, 556, 616, 742, 752.

29. 1375. **Ibn Khaldun.** See Nos. 632, 738, 789, 999.

Abu Zeid Abd-er-Rahman Ibn Mohammed Ibn Khaldoun was a native of Tunis, taught at Tlemçen, wrote his Prolégomènes near Frenda, whence he went to Tunis and completed his History of the Berbers. He was first the captive and subsequently the friend of Timur. He died at Cairo A.H. 808 = A.D. 1406.

30. 1400 (*circa*). **Ibn-Adhári.** See No. 719.

31. 1403. **Yakuti.**—This author lived in A.H. 806 = A.D. 1403; b[illegible] a native of Baku, and his name ought rather to be written Bakuti. See No. 444.

32. 1415. **Note** concerning the ayde and assistance of the English Marchants giuen to King John of Portugall for the winning of *Ceuta in Barbary,* which was the first occasion of all the Portugall discoueries, taken out of *Thomas Walsingham* his Latine Chronicle, 1415. (Hakluyt, vol. ii., pt. ii. p. 1.)

33. 1450. **El-Makarri** (otherwise written El-Mokri, or El-Maqqari), whose full name was Sahab ed-din Ahmed El-Makarri El-Fasi, was born at Fez and died about the middle of the 15th century. See No. 445.

34. 1471. **Azurara, Gomez Eanes d'.** See Nos. 462, 634.

35. 1473. **Polybius.**—Historiarum Libri V. Latine ex versione Nicolai Perroti. Roma: folio.

Various other editions. See No. 8.

36. 1482. **Bethencourt, Jean de.** See Nos. 174, 1164.

37. 1500? **Sepher Hatecanot.**

This MS., though in the Spanish language, is written in Hebrew characters. On a fly-leaf the following description appears: "These are the reforms agreed upon by those [Jews] expelled from Castilia, at Fez, with the advice of the learned and chief men, and, in order for every one to understand, it is written in Castilian." The volume was presented by Sir John Drummond Hay to Mr. Aaron Abensur of Tangier, and in 1887 was displayed in the Jewish Exhibition in London by his son Mr. Isaac Abensur of that town, in whose possession it remains. (Times of Morocco, June 23, 1887.) Many of the Morocco Jews who were expelled from Spain in 1492 and the following century call themselves "descendants of the Catastrophe of Castille" (Guerous de Castilla), and conclude their notarial documents regarding matters concerning the Synagogue with the words, "The whole according to the custom of Castile" (Hachol Keminahry Castilla). To this day they hold sad commemorations of the autos-da-fé of which their fathers were the victims (Godard, 'Maroc,' pp. 15, 16).

38. 1504–1590. **Correspondence** between the Government of Portugal and that of Morocco. See Nos. 446, 1119.

39. 1513. **Emanuel the Fortunate, King of Portugal.**—Epistola Potentissimi: ac Inuictissimi Emanuelis Regis Portugallie, & Algarbior, &c. De Victoriis nup. in Affrica habitis. Ad S. in xr̃o patrem & dn̄m nostrum dn̄m. Leonē X. Pont. Max. [arms of Portugal on the title-page, but no printer, publisher, or date]. 4to, pp. 5, but without pagination. Concluding with: Dat. in Vrbe nostra Vlyxbon̄ [Lisbon]. Pridie Kalen̄. Octobris. Anno dn̄i. M.D.XIII."

This brochure, an exquisite specimen of early printing—title black letter, text Roman character—was one of the letters addressed to Leo X. regarding the conquests of Emanuel the Fortunate. It describes the capture of Azamur, and the subjugation of the adjoining country.

A reprint of this letter was made in 1541. Basileae: 8vo.

40. 1516. **Ibn Ayas, Mohammed.** See No. 489.

41. 1532. **Passio** gloriosi martyris beati fratris Andreae de Spoleto, ordinis minorum regularis observantiæ p. catholico fidei veritate passi in Affrica civitate Fez. Anno 1532. Tolosoæ: 4to (in verse).

This martyr, usually called Martin de Spoleta, was an Italian Cordelier who came to Fez in 1530, under the protection of Mowlai Ibrahem, brother-in-law of Mowlai Mohammed, a Merini Sultan. But incurring the jealousy of the Jewish Rabbis, owing to his worsting them in argument, he was accused of conspiracy and the practice of magic, and, after being tortured, was done to death by a lance-thrust and a blow from a tile thrown at him.

A translation of this was published at Medina del Campo in 1543, entitled "Tesauro de virtudes copilado por un religioso portuguez, Sigue el Martyro de Fr. Andres de Espoleto en Fez." 4to.

42. 1535. **Torres, Diego de.**—Relacion del origen y successo de los Xarifes y del estado de los Reinas de Marruecos, Fez, Tarudãte y los de mas q̃ tienen usurpados. Sevilla, 4to, pp. 491, with index of pp. 37.

It was translated into French by Charles de Valois, duc d'Angoulême, under the title "Relation de l'Origine et Succéz des Cherifs et de l'Estat des Royaumes de Maroc, Fez et Tarudant et autres provinces qu'ils usurpent, C.D.V.D.D.A" (Initials of the Duc). Paris, 4to, pp. 416.

This forms part (pp. 226) of vol. iii. of the translation of Marmol. It was also printed separately in one volume (4to, Paris, Jean Camusat) in 1636.

43. 1543. **Mela, Pomponius.**—De Situ Orbis. Libri Tres. Basiliæ: folio. Many other editions; amongst these may be mentioned:—Pomponii Melæ de Situ orbis Libri iii. cum notis integris Hermolai Barbari, Petri Joannes Olivarii, Fredenandi Nonii Pontiani, Petri Ciacconii, Andreæ Schottii, Isaaci Vossii, et Jacobi Gronovii, accedunt Petri Joannis Nunnessii Epistola de Patria Pomponii Melæ & Adnotata in Proemium, atque duo priora Capita Libri i. et Jacobi Perizonii Adnotata ad Libri i. Capita septemdecim, curante Abrahamo Gronovio, Lug. Bat. 4to, 1722, 2nd ed., 1748, pp. 108. Opera et Studio, J. Reinoldii; Eton, 4to, 1814. Collection des Auteurs Latins, avec la traduction en Français publié par M. Nisard: Macrobe, Varron, Pomponius Mela; Paris, 1845, 8vo, pp. 709. Frick, De Chorographia libritres (1808).

Mela (No. 9) examines the three divisions of the globe known to the ancients, and describes Mauretania (Chapter V. of Gronovius' Edition); Numidia, with its capital, Cirta; Africa, with its cities, Hippone, Rusicada, Utica, Carthage, etc., Leptis, Lake Triton, the Island of the Lotophagi, Oea, the modern Tripoli, and the Cyrenaica with the oasis of Jupiter Ammon.

44. 1550. **Ramusio** [or **Rhamnusio**], **Gian Battista.** See Leo, whose work he first edited in his 'Navigatione e Viaggi,' Nos. 45, 49, 50, 51, 109.

45. 1550. **Leo Africanus.**—Della Descrizione dell'Affrica e delle cose notabile che quive sono per Giovan Leone Affricano.

Itinerario di varii rinomati Viaggiatori nelle parte dell'Affrica, Asia ed America quali si leggono nella raccolta di Giovanbattista Ramvsio. Voluvme primo, pp. 1–96. Venezia: folio.

This title was changed in later editions (1554, 1563, 1588, 1606, 1613) to 'Delle Navigazioni e Viaggi,' etc. In spite of all the editorial care of Ramusio (Secretary to the Venetian Council of Ten), who edited the work from the original MS., translated from Arabic into Italian by Leo himself, it is full of grammatical mistakes, and is written in somewhat uncouth language. The Arabic MS. has long been lost, though it was at one time in the library of Vincenzio Penelli (1535–1601). The Italian text of Leo in Ramusio, now the *editio princeps*, is dated Rome, March 10, 1526; but there was no published edition of that date.

Leo was an Arab of Granada, named El-Hassan bin Mohammed El-Wezaz Al-Fasi—that is, the Fezan, or sometimes from being born in Granada—El-Gharnati (the Granadian), who visited a great part of Africa. He was taken by corsairs off the Island of Jerba about 1520, and baptized by Leo X., who gave him his own name.

Though a native of Granada, he went to Africa at a very early age, and studied at Fez; held many important offices in Morocco; and visited Timbuktu and many parts of the Barbary States before his conversion to Christianity.

His later career is shrouded in obscurity. But he is believed to have returned to Africa, recanted Christianity, and died in Tunis.

46. 1550. **Salazar, Pedro de.**—Historia en la cual se cuentan muchas guerras

entre Cristianos é infideles, con las guerras acontecidas en Berbería entre el Xarife y los reyes de Marruecos, Fez y Velez. Medina del Campo: folio. (Duro.)

Two other editions in 1570 and 1576.

47. 1551. **The originall of the first voyage** for traffique into the kingdom of **Marocco** in **Barbarie**, begun in the yeere 1551, with a tall ship called the *Lion*, of *London*, whereof went as Captaine Master **Thomas Windham**, as appeareth by this extract of a letter of **James Aldaie** to the Worshipfull Master **Michael Locke**, which **Aldaie** professeth himselfe to haue bene the first inwenter of this trade. (Hak. vol. ii., pt. ii., p. 7.)

48. 1556. **Cleynaerts van Diest, Nicolaes** (better known by his Latinised name of Nicolaus Clenardus).—Nicolai Clenardi Peregrinationum ac de rebus machometicis Epistolæ elegantissimæ. Lovanii (Louvain): 8vo.

Another edition in 1561. An abridgment of these letters appeared in Adrian van Nispen's 'Reysen wt verscheyde brieven bij een versamelt,' Dordrecht, 1651, 12mo; and in the 'Naauwkeurige Voyage van Nicolaas Clenard na Africa gedaan int' jaar 1535, uit syn eygen brieven byeenverzameld,' as part of a Collection of Voyages, published by Pieter van der Aa, of Leyden, between the years 1707–1709: 'Zee en Land Reysen door Pieter van der Aa, mits garders andere Gewesten geddan, 1246 to 1696, 28 vols.' folio and 8vo.

Some account of him will be found (among other places) in Tiele, 'Bouwstoffen voor een bibliog. van Ned. Reisbeschr.' in 'Bibliog. Adversaria,' Deel i. p. 37; St. Génois, i. p. 211, etc. A French translation was published by M. Nève in 1845, *q. v.*

Clenard went to Fez in 1535 (not 1540, as often affirmed) and stayed a year and a half in that city, for the purpose of profiting by its libraries and learning. His account is valuable, brief though it is, as the first since Leo Africanus wrote. But he seems to have been disappointed with his journey; the scholars of Fez being few and the libraries almost non-existent. There was an occasional auction of books at the chief mosque; the volumes being mainly devotional, and the attendants at the sale more frequently idlers attracted by curiosity than veritable purchasers.

49. 1556. **Leo Africanus.**—Historiale Description de L'Afriqve, tierce partie dv monde, contenant ses Royaumes, Regions, Viles, Cités, Chateaux, et forteresses: Iles, Fleuues, Animaux, tant aquatiques, que terrestres: coutumes, loix, religion et façon de faire des habitãs, auec pourtraits de leur habis: ensemble autres choses memorables, et singulieres nouueautés: Escrite de nôtre tems par Iean Leon African, premierement en langue Arabesque, puis en Toscane, & à present mise in François. Plus cinq Nauigations au païs des Noirs, auec les discours sur icelles, comme verres en la page suiuante. Tome Premier, Lyon, par Iean Temporal. folio.

The first voyage is that of Hanno the Carthaginian. Leo begins at page 1—the previous 40 pp. being unnumbered—and ends on p. 394. After this follow the voyages of "Alouys de Cademoste [Alvise da Ca da Mosto], Pierre de Sintre" [Pedro de Sintra], a Portuguese pilot; a letter written by Amerigo Vespucci to "Pierre Sodern, Gonfalonier de Florence," which ends with p. 495, after which there is a voluminous index of 20 double-columned unnumbered pages. The woodcuts are curious but evidently imaginative. (The copy from which this description is taken belonged to the great Duke of Marlborough.) The translation was made by Temporal the printer, and is the best of any yet made. It is dedicated to the Dauphin, afterwards Francis II., the first husband of Mary Stewart. The kingdom of France is curiously

enough referred to as "nôtre Republique Françoise." This edition was pirated the same year by Plantin, who six years before had begun his famous printing and publishing house in Antwerp. Anvers, 1556, 8vo, pp. xxvii (not paged) + 413 (on alternate pp. = 826) + Index 47 pp. (not paged).

50. 1556. **Ioannis Leonis Africani,** De totivs Africæ, descriptione, Libri i. ix. Quibus non solùm, Africæ regionum, insularum & oppidorum situs, locorumq' interualla accuratè complexus est, sed Regum familias, bellorum causas & euentus, resq' in ea memorabiles, tam à seipso diligenti obseruatione indagatasq' in veris Maurorum Annalib. memoriæ traditas, copiose descripsit, recens in Latinam linguam conuersi Ioan. Floriano Interprete. Antverpiæ: Apud Ioan. Latium, MD.LVI. cum priuilegio, 8vo.

Title, privilege, dedication, and index (pp. 32). Text to pp. 302; but as only one side of each leaf is numbered, the pages actually amount to 601. This translation is the one most frequently quoted. It was made by the Rector of the High School of Antwerp, but is a most inaccurate and misleading version. A second edition appeared in 1558, and it was thrice pirated with all its blunders (see Nos. 51, 180).

51. 1559. **Ioannis Leonis Africani** de totivs Africæ, descriptione Libri ix. Qvibus non solvm Africæ regionum, insularum & oppidorum, situs, locorumq', interualla accuratè complexus est, sed Regium familias, bellorum causas & euentas resq' in ea memorabiles, tam à seipso diligenti obseruatione indagatas, quàm in veris Maurorum Annalibu. memoriæ, traditas, copiosè descripsit, recens in Latinam linguam conuersi Ioanne Floriano interprete. Arabicè primùm scripsit Author: deinde Italico sermone reddidit: Ioannes Florianvs ex Italico Latinum fecit. His recens accedit Hannonis Carthaginensium ducis Nauigatio, qua Libycam oram ultra Herculis columnas lustrauit *Conrado Gesnero* interprete, cum scholiis. Tigvri [Zürich] per Andream Gesnerum. F. Anno M.D.LIX., 12mo.

As Florianus (Froppert, 'Bibliothec. Belg.,' p. 639) did not die until 1585, this edition was published in his lifetime. It differs from the original in having the pages (1–517) consecutively numbered, and in the chapters and paragraphs of each book being also numbered. But the type, in italics, is small and not very clear. It is not often met with. The Voyage of Hanno, separately paged (1–21), is an addition from Ramusio's Collection.

52. 1552. **The Second Voyage to Barbary** in the yeere 1552. Set foorth by the right worshipfull Sir **John Yorke,** Sir **William Gerard,** Sir **Thomas Wroth,** Master **Francis Lambert,** Master **Cole,** and others; written by the relation of Master **James Thomas,** then page to Master **Thomas Windham,** chiefe Capitaine of this voyage. (Hak. vol. ii, pt. ii., p. 8.)

Windham's Voyage is reprinted in Kerr's 'Voyages,' vol. vii., and in Astley's 'New General Collection of Voyages and Travels,' vol. i. (1745).

53. 1558. **Newe Zeitung** aus dem Königreich Fessa in Mauritanien gehn Nurnberg geschrieben. 4to. (Renou.)

54. 1558. **Calvete de Estrella, Alfonso.**—La Conquista de Africa en Berberia, escrita en latin por . . . Salamanca: 8vo. (Duro.)

55. 1563? **Butero, João.**—Relações de Africa. (Da Cunha, 'Praço de Mazagam,' p. 29.)

56. ——— **De Bello Mazaganico.**—MS. Latin poem on the defence of Mazagan under the governorship of Rui de Sousa de Carvalho, contained in the

Lisbon Library. (Rivara, 'Catalogo dos Manuscriptos da Bibliotheca Publica Eborense,' t. i., p. 219.) It begins with these lines:

"Lusiadum ingentes animos, et funera latos
Edita per muros, quos insuperabile tollit."

57. 1564. **Relacion del Suceso** de la jornada del rio de Tetuán que D. Alvaro de Bazan, Capitán general de las Galeras de España, hizo por mandato de S. M. en 1564. MS. in the Acad. of Hist. and Library of the Marine at Madrid. Collection iv. 18. (Duro.)

58. ——— **Escobar, Fr. de.**—Discurso de la jornada al Peñon de Velez de la Gomera en 1564. Coll. de docum. ined. para la Hist. de España, tom. xiv. (Duro.)

59. 1565. **Velasquez de Velasco.** — Description du royaume de Maroc. MS.

"Vers 1770 le savant Velasquez de Velasco, prisonnier d'État au Pegnon d'Alhucemas, travaillait à des Mémoires historiques sur la Barbarie, et à une Description du royaume de Maroc qui sont restés manuscrit." (Godard, p. 565. No. 831.

60. 1566. **Collasos, Baltasar.**—Comentarios de la fundación, conquista y toma del Peñon de la Gomera y lo acaecido, hasta el de desde el año 1562, a los capitanes de Su Magestad. Valencia: 8vo. (Duro.)

61. 1566. **Tebaldi, G. B.,** and **Ulloa, Alfonso.**—La Historia dell' Impresa di Tripoli di Barbaria, della Presa del Pegnon di Velez della Gomera in Africa, et del Successo della potentissima armata Turchesca venuta sopra l' Isola di Malta l'anno 1565. La descrittione dell' Isola di Malta. Il disegno dell' Isola delle Zerbe, & del Forte, fattovi da Christiani & la sua descrittione. Small 4to, view of Tripoli, plan of Malta, and portrait of the Grand Master Giovanni de Valetta. G. B. Tebaldi, Al lettore, pp. 7. Descrittione dell' Isola di Malta, pp. 5. Descrittione dell' Isola delle Zerbe et delle mutationi de suo governo, pp. 2. All' illustrissimo Signor Il. S. Gio, Giacomo Fucchero Alfonso Ulloa, pp. 4. Il Successo dell' impresa di Tripoli de Barbaria, pp. 87, with pp. 3 (unnumbered) giving a list of the Knights of Malta who fell in the siege. The recapture of Pegnon di Velez or Badis from the Turks in 1564 is contained in Part iii. p. 51. [Venetia, 1566.]

Ulloa in his Dedication to J. J. Fugger mentions that Ferdinand Columbus, son of the great Navigator, gave his library to Seville for the use of the public.

62. 1568. **Coelius, Augustinus Curio.**—Coelii Augustini Curionis Sarracenicae historiae libri iii.; in quibus Sarracenorum, Turcorum, &c. Item Cael. Aug. Cur. Marochensis regni descriptio. Basileae: 8vo. (Renou.)

63. 1568. **Tratado da Vida e Martyrio** dos cinco martyros de Marruecos. Coimbra. (Duro.)

64. 1569. **The Coppie of a Lettar** sent from the King of Moores, as he cawleth hymselfe, i.e. Mawmatt Aumuleize, to Don John of Austria, written in Ferreira, 28 July, Anno 1569. Rehearsing the hardships which his ancestors, Kings of Granada, had received; & particularly those done to himself (only for wearing a Dagger) & to his parents & brother now in the Gallies. For whose Release he promises to send back 400 Prisoners, whom he will burn alive, in case his parents & brother receive further ill usage. (Bib. Harleianæ in B. M. Cat. vol. i., No. 60.)

65. 1570. **Fuentes, Diego.**—Conquista de África, donde se hallan agora nuevamente recopiladas por . . . . Anvers: 12mo, pp. 71.

66. 1570. **Salazar, Pedro de.**—Historia en la qual se cuentã muchas guerras succedidas entre Christianos y infideles [printed *infieles*] assi en mar como en tierra desde el año de mil y quincentos y quarenta y seys hasta el setenta y cinco. Con las guerras acontecidas en la Berberia entre el Xarifa y los reyes de Marueccos, Fez, y Velez. Compuesta por Pedro de S. . . . vezino de la muy noble villa de Madrid. Medina del Campo: fol., pp. 272, = 544, as only alternate pages are numbered.

67. 1571. **Osorius Hieronymus,** "Lvsitam suivensis ¡in Algarbiis episcopi" (Bishop of Sylves, in Portugal).—De rebus Emmanuelis Regis Lusitaniæ, gestis Libri xii. Coloniæ: folio.

This work contains an account of all Emanuel the Fortunate's conquests in Morocco.

It was reprinted in 1586:—De Rebvs Emmanvelis Lusitaniæ regis invictissimi virtvte et avspicio, libri duodecim. Item: *Io: Matatii Metetti.* De reperta ab Hispanis et Lusitanis, in Occidentis et Orientis Indiani, nauvigatione deq. populorum ejus vita, moribus, ac ritibus. Coloniæ, 1586: 8vo, pp. lx. 368.

Translated into French, 1587:—Osorius Ierosme. "Histoire de Portvgal, contenant les entrepris, nauigations & gestes memorables des Portugallois, tant en la conqueste des Indes Orientales, par eux descouuertes, qu'ès guerres d'Afrique & autres exploits, etc. etc." Paris: 8vo, pp. 14 (unpaged) + 1360 (paged 680, but on alternate pages) + 42 (Genealogy and Index unpaged).

Translated into English in 1752:—History of the Portuguese during the Reign of Emmanuel; containing all their Discoveries, from the Coast of Africk to the farthest parts of China: their Battles by Sea and Land, their Sieges and other memorable Exploits: with a Description of these Countries, and a particular account of the Religion, Government, and Customs of the Natives; including also the Discovery of the Brazils and their Wars with the Moors. Translated by J. Gibbs. London: 2 vol. 8vo.

68. 1572-1618. **Braun, Georgius, et Franciscus Hogenbergius.**—Civitates orbis terrarum, &c. Coloniæ Agrippinæ: 4 vol. folio, not paged.

Very little about Morocco.

69. 1573. **Marmol-Caravajal, Luy.**—Descripcion general de Áffrica, con todos los sucesos hasta el año 1571, de guerras que a avido entre los infieles y el pueblo christiano. Granada: 3 vol. folio. Málaga, 1599 (the first book printed in that city).

Book I. contains a general description of Africa. Book II. The Sect of Mohammed and the progress of his successors in Europe, Asia and Africa, including the establishment of the Arabs in Morocco. Book III. is devoted to Morocco. Book IV. to Fez. The rest of the book relates to other parts of Africa.

Marmol was a native of Granada, served in the expedition of Charles V. against Algiers, was taken prisoner, and travelled during seven years and eight months over a great part of North Africa. A French translation was published by D'Ablancourt at Paris in 1667, 3 vol. 4to, pp. 532, 578, 304.

70. 1575. **Thevet, André.**—Cosmographie universelle. Paris: folio.

At vol. i., p. 9, is a view of Peñon Velez de Gomera, with a description of Africa taken from Leo.

71. 1575. **Æthicus.**—Cosmographia. Ant. Augusti itinerarium provinciarum ex bibliotheca P. Pithœi, cum scholiis J. Simieri. Basileae: 16mo.

This work is attributed by some to one of the emperors of the name of Antoninus, by others to Æthicus, and by others again it is supposed to be the joint production of several authors [Brit. Mus. Cat.]. See Nos. 11, 722.

Many other editions have been published.

72. 1577. **Hogan, Edmund.**—The Ambassage of Mr. *Edmund Hogan* [or Huggins?], one of the sworne Esquires of her Majesties person, from her Highnesse to *Mully Abdelmelek*, Emperor of *Morocco* and King of *Fes* and *Sus*. Written by himselfe. (Hak. vol. ii., pt. ii., pp. 64–67.) See also 'State Papers,' Foreign Series, and Kerr's 'Voyages,' vol. vii. Also reprinted in Jackson's 'Account of Houssa and Timbuctoo,' pp. 494–505. (No. 527.)

73. 1577. Instructions given by Her Matie to Edmond Huggenes, sent to the King of Marucos and Fesse the . . . of Aprill, an^o. 1577. (Bib. Harleianæ Cat., vol. i., p. 8, Cod. 37, Art. 38.) The MS. contains 4 fol. pp. See also No. 72.

74. 1577. **Consulat of Morocco and Fez** created by Henry of France on the 10 Juin. MS. in the Ministère des Affaires Étrangères. (Thomassy.)

75. 1577. **Ramos, Geronimo.**—Crónica do Infante Fernando que morreo em Fez. Lisboa: 8vo.

The famous battle of Tangier took place in 1433. D. Fernando was left as a hostage with the Moors, who condemned him to work in a mill because the Portuguese would not surrender Ceuta as the price of his liberty. He died at Fez after six years' captivity.

76. 1577. **Fr. Juan Bautista.**—Crónica de la vida y admirables hechos de Muley Abdel-Melech, emperador de Marruecos y rey de los reynos de Fez, Mequinez y Sus, y del sucesso en la restauracion de todos ellos en prosa y en verso. s. l.: 4to. (Renou.)

77. 1578. **Cagioni.**—Relatione per una lettera delle Cagioni che mossero' all' impressa d'Africa il Re del Portogallo, et il segerito della bataglia—M.S. 4to, pp. 18.

Whether the original of this document has been printed or even exists is not known. The only copy we have seen is among a series of important historical and geographical papers in the handwriting of Dr. Giulio Pallavicino, bearing the date "Genova 1584–90" (Dr. R. Brown's Collection).

78. 1578. **A Dolorous discourse** of a most terrible and bloudy Battel fought in Barbarie, the Fourth day of August last past, 1578. Wherein were slaine two Kings (but as most men say three) besides many other famous personages, with a great number of captains and other souldiers that were slaine on both sides. Whereunto is also annexed a note of the names of diuerse that were taken prisoners at the same time. In this conflicte were slaine 3000 Almaines, 700 Italians and 2000 Spaniards, whereof Don Alfonso Dageler, a Knight of Cordua, was one. In this battel it is supposed that all three kings were slaine. London: 16mo, ~~B. L.~~ Brit. Mus. press-mark: $\frac{\text{C. 33. a.}}{16}$.

The three kings here mentioned were Dom Sebastian, King of Portugal, who landed at Azila and was marching on Fez by El-Kassar; with him was Mowlai Mohammed, a pretender to the throne of Morocco. Abd-el-Melek, the actual Sultan, was ill at the time, and died on the field. This great battle of Alcassar (El-Kassar), at which 15,000 men fell, completely put an end to Portuguese influence in Morocco.

79. 1578. **Letter of Sultan Muley Meluc** (Ahmed or Abd-el-Melek) to Don Sebastian, King of Portugal, written before the departure of the King on his expedition to Africa.

M. Berbrugger states that a "Copie espagnole manuscrite et contemporaine figure parmi les documents contenus dans le volume 1686 de la bibliothèque du Gouvernement-général." He gives a translation and analysis of it, 'Rev. Afr.,' vol. x. p. 451.

80. 1578. **Centellas, Joachin de,** Gentil hôme Portugais.—Les Voyages et Conqvestes des Roys de Portugal es Indes d'Orient; Ethiope, Mauritanie d'Afrique et Europe; avec l'origine, succession et descente de leurs Maisons, iusques au Serenisz. Sebastian, nagueres atterré en la bataille qu'il eust contre le Roy de Fez. Plus une description des Pays; Causes et progrez des guerres; Entier discours de la Bataille; La harangue faite aux Seigneurs, Capitaines et Soldats de l'Armée Chrestienne, auparavant que combatre; Des Roys et Seigneurs y occis, tant d'une part que d'autre, et de l'honneur funebre fait au susdit Roy en Portugal. Le tout recueilly de fideles tesmoings et memoires du Sieur J. de C. Paris: 8vo, pp. 60 (actually 120, as alternate pages only are numbered), with map.

81. 1579. **Philippe II.** of Spain attempted to obtain possession of El-Araish. The unpublished account of the Mission sent by him is in the Government General Library at Algiers, Archives Espagnoles, C. iv. No. 4. This is a most curious document.

82. 1579. **Chesneau, Nicolas.**—Histoire Véritable des Dernières Guerres Advenues en Barbarie et de Succéz pitoyable du Roy de Portugal dernier Don Sebastien (que Dieu absolve), qui mourut en bataille le quatriesme Août M.D.LXXVIII. Avec l'origine et descente des Roys que de nostre temps ont commandé és Royaume de laditte Barbarie. Traduitte de l'Espagnol en François. à Paris ches Nicolas Chesneau, Rue St. Jaques au Chesne. Verd, M.D.LXXIX.: 8vo, pp. 88.

With a map of the Battle of El-Kassar. A copy exists in the Bib. Nat. Paris; press-mark, Oa. 48. Another was sold in 1887 with the Library of M. Posthumus of Amsterdam.

83. 1581. **Venegas de Côrdoba, Pedro.**—Relaçion de todo al ambaxador, Pedro Vanegas de Cordova, en el Viaje que haze á la ciudad de Marruecos con çierta embaxada que Su Magestad le enbia al rrei Muley hamete, rrei de Marruecos y fez.

A MS. in the Biblioteca de la Real Academia de la Historia, Madrid. Published in the 'Bol. Soc. Geogr. de Madrid,' t. ix., p. 198. See Nos. 1411, 1803.

84. 1581. **Afrikanischen** Kreigsbeschreibung sampt der Portugalesern schrecklichen Niderlog. Basel: 8vo. (Renou.)

85. 1581. **Freigius, Joan. Thomas.**—Historia de bello Africano: in quo Sebastianvs Serenissimvs Portvgalliae Rex, periit ad diem 4 Aug. Anno 1578, Vnà cum ortv et familia regvm, qvi nostro tempore in illis Africae regionibus imperium tenuerunt. Ex Lusitano sermone primò in Gallicum inde in Latinum translata. Noribergae, CIO IO XXCI.: 16mo, pp. 66 [no pagination]. See No. 104.

With a map of Morocco and a plan of the battle of El-Kassar el-Kebir (Alcassar), at which the king was killed.

86. 1585. **Roberts, Henry.**—The Ambassage of **Master Henry Roberts,** one

of the sworne Esquires of Her Maiestics Person, from her highnesse to Mully Hamet, Emperour of Marocco and the King of Fesse and Sus, in the yeere 1585; who remained there as Liger for the space of 3 yeeres. Written briefly by himselfe. (Hak. vol. ii., pt. ii., p. 117.) Reprinted in Kerr's 'Voyages,' vol. vii.

There is also "an Edict of Muley Hamet, King of Fez and Emperour of Marocco," to the effect that no Englishmen should be molested or made slaves in any part of his dominions.

87. 1585. **Letters patents** or priuiledges granted by Her Majestie to certaine noblemen and marchants of London for a trade to Barbarie in the yeere 1585. (Hak., vol. ii., part ii., p. 114.)

The list of noblemen begins with the names of the "Erle of Warwike and Robert Erle of Leicester," . . . and they are described as "Trading into the countrey of Barbary, under the Government of Muley Hammet-Sheriffe, Emperor of Morocco and King of Fesse and Sus."

88. 1587. **The Queenes Majestie's letters** to the Emperour of Marocco, dated 20th July, 1587. Written in Spanish, with an English translation. (Hak., vol. ii., part ii., p. 119.) Asking him to "proceed in justice against one John Herman, our subject which has grieuously offended Us."

89. 1588. **Original letters** of Henry Roberts to the Earl of Leicester, dated at Marocco, 2 July, 1588, concerning the affairs of Don Antonio, King of Portugall, which Qu. Elizabeth countenanced in that Court. (Bib. Harleianæ Cat., vol. i., p. 196, Cod. 296, Art. 11.)

90. 1588. **Copie** of a letter in Spanish sent by Qu. Eliz. to Mir' al Mumminin, Xerif of Marocco, Fez and Sûs, dated at Her Palace of St. James' 10 September, 1588, in behalf of the son of Don Antonio, King of Portugal, whom he has detained as a hostage. (Bib. Harleianæ Cat., vol. i., p. 176, Cod. 296, Art. 59.)

The reply to this letter is in the Public Record Office, and is given in one of the Catalogues published by direction of the Master of the Rolls, entitled *Syllabus of "Rymer's Foedera,"* p. 819. It is dated 4 March, 1592. The Sultan excuses himself for the long delay in answering the Queen's letter in behalf of the Prince of Portugal, and requests H.M. to send him aid.

91. 1588. **Pereira, L.**—Elegiada do Successo da Armada do Rey D. Sebastian. Lisboa.

92. 1588. **Sanuto, M. Livio.**—Geografia distinta in xiii. libri, &c., con xii. tauole di essa Africa in dissegno di rame.

Venezia, folio, pp. 146, with a copious index and 12 maps. Only one vol. was ever published. He quotes Leo frequently.

93. 1589. **Historien** von Spanien, Portugal, und Afrika, auch wie König Sebastian, mit 1800 Mann erschlagen worden. München: fol., with plates.

94. 1590. **Marlowe, Christopher.**—Tamburlaine the Great, who from a Scythian Shephearde by his rare & wonderfull Conquests became a most puissant & mightye Monarque and (for his tyranny & terrour in Warre) was tearmed the Scourge of God. Delivered in two Tragicall Discourses, etc. London: 4to.

This well-known play has much about "Techelles, the King of Fez," and his supposed travels. Its stilted language and bombast shares with George Peele's "Alcazar," Nos. 101, 1804, the distinction of being gently satirized by Shakespeare in the rant of Pistol (Henry IV., Part II., act ii. sc. 4), though Marlowe is also quoted in "As you Like it," and apostrophised as "Dead Shepherd."

95. 1592. **Edrisi, Abu Abdulla Mohamed Ibn Mohammed el-.**—The Geography of Edrisi, Arab text, abridged. Rome: no pagination.

This bears the title: كتاب نزهة المشتاق في ذكر الامصار والاقطار والبلدان والجزر والمدين والافاق

There are many editions of this great work; the Bodleian has two MSS. A Latin translation was published in Paris in 1619. The learned J. M. Hartmann published his 'Commentatio de Geographia Africae Edrisiana.' Gottingae: 4to, 1791; a second edition, Edrisii Africa, Gott. 1792; and another edition, which was the best (8vo, pp. cxxiv. + p. 530 + Index, Corrections, &c.) in 1796. Jaubert published a French translation in 1836, and Dozy and De Goeje a more complete version in Arabic and French in 1886 [Nos. 153, 589].

96. 1592. **Mariana, Juan de.**—Historiae de rebus Hispaniae. Toleti: fol.

Several other editions. A French Translation, Rotterdam, 1694, 2 vol. 12mo, and an English one in 1699: 'The general History of Spain from The first Peopling of it by Tubal till the Death of King *Ferdinand*, who united the Crowns of *Castile* and *Aragon*, with a Continuation to the death of King *Philip III.*, written in *Spanish* by the R. F. F. *John de Mariana*, to which are added two Supplements, the First by *F. Ferdinand Camargo y Salcedo*, the other by *F. Basil Varen de Soto*, bringing it down to the present Reign. The whole translated from the Spanish by **Capt. John Stevens**.' London: fol., pp. 563 and 95.

Much interesting matter concerning Morocco.

97. 1593. **The Casting away** of the *Tobie* neere Cape Espartel, corruptly called Cape Sprat, without the Straight of Gibraltar, on the Coast of Barbarie. (Hak., vol. ii., pt. ii., p. 201.)

Thirty-eight of the crew were drowned; the twelve survivors were sent captives to Morocco, and subsequently delivered by the English merchants and embarked at Santa Cruz (Agadir).

98. 1594. **Madoc, Laurence.**—A briefe relation concerning the estate of the cities and prouinces of Tombuto and Gago, written in Maroocco the first of August 1594, and sent to M. Anthony Dassel, marchant of London. (Hak., vol. ii., pt. ii., p. 192.)

99. ——— Another briefe relation concerning the late conquest and the exceeding great riches of the cities and prouinces of Tombuto and Gago, written from Marocco the 30th August 1594 to M. Anthony Dussel of London aforesaid. l. c.

This was the first account which reached Europe of the overthrow of the Sonhrai dynasty by Juder u Zergu, "a Cahia of the Andalouzes" or Spanish Moors, who had marched against the Upper Niger princes under the orders of Ahmed II. "El Mansur," or, as he was afterwards called on account of the enormous treasures brought back from the fray, 'El-Dehebi, the Golden or Rich, a name also taken by a later Sultan.

100. ——— Translation of a letter from the King of Morocco to the King of England. (Bib. Harleianæ Cat., vol. ii., p. 490, Cod. 2104, Art. 2.)

This was to K. Charles I., acquainting him with a victory gained over the rovers of Salli, and desiring his aid by sea against those of Tunis, Algiers and other places.

101. 1594. **Peele, George.**—The battle of Alcazar, fought in Barbarie between

Sebastian King of Portugal & Abdelmelec King of Morocco, with the Death of Captain Stukeley, as it was Sundrie Times plaid by the Lord High Admirall his Servants. London: 4to.

This play (which has been edited with the rest of Peele's works by Mr. Dyce) is thought to be ridiculed by Shakespeare in Henry IV., Part II., act ii., scene 4 (written four years after its issue), where Pistol rants about the "hollow pampered jades of Asia." See also Nos. 93, 1804.

102. 1596. **Discours** véritable de la bataille donnée près de Fez en Affrique, le 30 aout 1595, entre Mulle Xeque, fils aisné du present roy de Fez d'une part, et Mullé Nazar d'autre part. Escripte de Maroc par un facteur qui y réside. Paris: 12mo, pp. 13. Another edition. Lyons: 8vo, 1596.

103. 1597. **Treillant, Pierre.**—Discours véritable de la seconde et dernière bataille donnée a Taguate, près de Fez, ville de Mauritanie en Afrique, le 12 Mai 1596, entre Moulé Cheq, fils ainé de Moulé Hamed Cherif, à present roi de dict païs, d'une parte, et Moulé Nacer Cherif d'autre part. Datée de Rouen, 11 Janvier, 1597.

[Cette lettre manuscrite se trouve à la Bibl. royale dans les mémoires du règne du roi Henri IV., No. 9092, collection de lettres adressées au connétable de Montmorency, feuilles 94–97. Renou.]

It no longer exists in the Bibliothèque Nationale at Paris, where it is marked as "absent."

104. 1598. **The Voyage of Thomas Stukeley,** wrongfully called the Marques of Ireland, into Barbary in 1578, written by *Johannes Thomas Freigius* in 'Historia de caede Sebastiani Regis Lusitaniae.' (Hakluyt, vol. ii., part ii., p. 67. See also No. 94.

105. 1599–1600. **Hakluyt, Rev. Richard.** — The Principal Navigations, Voyages, Traffiques, and Discoveries of the English Nation made by sea or ouerland, to the remote and furthest distant quarters of the Earth, at any time within the compasse of these 1600 yeres. Divided into seuerall Volumes, according to the positions of the Regions, whereunto they were directed. London: 3 vols. folio. The 5 vol. folio edition of 1809 is that quoted.

Vol. ii., part i., contains The English Voyages made by and within the Streight of Gibraltar.

The following have reference to Morocco:—

First two Voyages to Barbary, 1551–2.

Hogan, Ed., Voyage & Ambassage to the Emperour of Morocco, 1577.

Stukely, T., Voyage into Barbary, 1578.

Roberts, H., Voyage & Ambassage to Mully Hamet, Emperour of Marocco, 1585.

Vol. iii. Two briefe Relations concerning the Cities & Provinces of Tombuto and Gago, & the Conquest by the King of Marocco, written in 1594. (Laurence Madoc.)

Report of the Casting away of the Ship *Tobie* neere Cape Espartel, on the Coast of Barbary, 1593.

106. 1600. **Marmol, Carujal Luys del.**—Historia del Rebelion y Castigo de los Moriscos del Reyno de Granada. Malaga: fol., pp. 245 + contents, etc.

A fiendish account of a fiendish "Castigo" indirectly concerned with the history of Morocco.

107. 1600. **Blount, Edward.**—The Historie of the vnïting of the Kingdom of Portvgall to the Crowne of Castill; containing the last warres of the Portugals

against the Moores of Africke, the end of the house of Portugall, and change of that Gouernment, the description of Portugall, [etc.] London: folio, pp. 324.

The volume concerns Morocco in so far that pp. 1–59, 66, and 302 contain the history of or references to Dom Sebastian's invasion, defeat and burial, the writer having no doubt as to his death.

108. 1600. **Bernhere, Thomas.**—Letter "to his loving brother Master Edward Wright," dated from Morocco in Barbary, 24th June, 1600. (Purchas, 'Pilgrimes, vol. ii., p. 852.)

109. 1600. **Leo Africanus.**—A Geographical Historie of Africa, written in Arabicke and Italian, by Iohn Leo a More, borne in Granada and brought up in Barbarie. Wherein he hath at large described, not onely the qualities, situations, and true distances of the regions, cities, townes, mountaines, riuers, and other places throughout all the north and principall partes of Africa; but also all the descents and families of their kings, the causes and euents of the warres, with their manners, customes, religions and ciuile government, and many other memorable matters: gathered partly out of his owne diligent obseruations, and partly out of the ancient records and Chronicles of the Arabians and Mores. Before which out of the best ancient and moderne writers is prefixed a generall description of Africa, and also a particular treatise of all the maine lands and Isles vndescribed by Iohn Leo. And after the same is annexed a relation of the Great Princes and the manifold religions in that part of the World. Translated & collected by Iohn Pory, lately of Goneuill and Caius College in Cambridge. Londini: Impensis Georg. Bishop [one of the Printers of Hakluyt's "Principal Navigations"], 4to, pp. 420.

Title, Dedication to Cecil, 1 page unnumbered: To the Reader, 5 pp. unnumbered: A generall description of all Africa, togither with a comparison of the ancient and newe names of all the principall countries and prouinces therein, pp. 1–57: An approbation of the historie ensuing, by Mr. Richard Haklvyt [with extracts in praise of Leo by Ramusio, Ortelius, Boden, and Posseuimus], pp. 57–60: Leo's text, pp. 1–358: A briefe relation concerning the dominions, reuenues, forces, and manner of gouernment of sundry the greatest princes either inhabiting within the bounds of Africa, or at least possessing some parts thereof, translated for the most part out of Italian [Malagucci, Barros, Osorius, Ramusio, Carpini, Dresserus, Alvarez, Pigafetta, in Hartwell's translation, and others], pp. 359–420, with a map of Africa. Pory's edition, undertaken with the approval and apparently at the suggestion of Hakluyt, is in very quaint English, but being from the imperfect Latin edition of Florianus (No. 50), shares in all the inaccuracies of that version.

It is this translation on which the Hakluyt Society's Edition, now being prepared by Dr. R. Brown, is based.

110. 1600? **De Goes, Damião.**—Chronica do Serenisso Senhor Rei D. Emanuel, escrita por . . . . Coimbra: 4to, 2 vols., each of 2 parts, pp. 448, 664.

Gives an account of Emanuel the Fortunate's Morocco conquests.

111. 1600? **Menezes, Manuel de.**—Chronica de El Rey D. Sebastião. (Da Cunha, p. 58, etc.)

112. 1601. Discourse concerning the Successe of the King of Portugal, Don Sebastian, from the time of his voyage into Affricke, where he was lost in the battle against the infidels in 1578 to January 1601, whereby most evidently appeareth, that he whom the Seigneurie of Venice hath held a prisoner for the

space of 2 years and 22 months is the right and true King of Portugal, D. Sebastian; translated by A. M. [Anthony Munday]. London: 4to.

We have not been able to see the original Italian Edition from which both this and the French version (*ut infra*) were taken. Sir Walter Raleigh petitioned for a licence to translate "an Italian history of King Sebastian and Thomas Stukeley's invasion of Morocco," on the ground that he had perused and corrected something therein (Stebbings, "Sir Walter Ralegh" [1891], p. 142).

113. 1601. **Adventure Admirable** par dessus toutes les Autres des Siècles passez et présent, par laquelle il appert évidement que D. Sébastian, vrai et légitime Roy de Portugal, incognu depuis la Bataille qu'il perdit contre les infideles en Aphrique l'an 1578, est celui même que les Seigneurs de Venis ont détenue prisonnier deux ans et vingt deux jours finis au xv. Décembre dernier passé. Auquel jour il fut extraordinairement remis en liberté et sortant de Venis s'en vient à Florence. Le tout traduit du Castillan en François, revue et augmenté de plusieurs choses et de l'admirable Nativite dudict Roy Don Sebastian exposée l'an MDC par l'incomparable Astrologue et Mathematicien Carlo Lauro, nouvellement apporté de Rome et mis en François pour le contentement des plus curieux. M.D.C.I. No name of printer or place; but the "Au Lecteur" is dated "Lyons le 30 Jan. 1601." 8vo, pp. 97.

A copy of this exists in the Bib. Nat., Paris; press-mark, Oe. 51. Another was sold with M. Posthumus' library at Amsterdam in 1887.

114. 1601. **Ragguaglio del cavallier Ciro Spontoni** dello fatto d' arme seguito nell' Africa tra Don Sebastiano re de Portugallo e Muley Auda Malucco Re de Marocco, de Fez, de Tafilet e di Sus. Bologna: 4to. (Renou.)

115. 1602. **Castro, Joao de.**—Discurso da vida de El Rey Dom Sebastiam de Portugal. Paris: 4to, (Da Cunha.) p. 29.

116. 1603. **A Continvation** of the Lamentable and Admirable Adventvres of Dom **Sebastian, King of Portvgale.** With a declaration of all his time employed since the battell in Africke against the Infidels 1578, vntill the present yeare 1603. London: 4to, pp. 68. (Harleian Misc., vol. v., pp. 433–466.) This is also No. 80 in the Catalogue of Pamphlets in the Harleian Library. [Various letters by Dr. Texere, Don Raimond Marqueti, D. Prospero Baracco, and others, "proving" that "the prisoner detained now in Naples is not that Marco Tullio Catizone, whom the Spaniards in their libels haue so falsely proclaimed; but the very true King of Portugale, Dom Sebastian." As a matter of fact this impostor, who became a pretender 25 years after the King was slain in the battle of Al Kassar, was a poor Calabrian who could not speak a word of Portuguese. He was sent to the galleys and afterwards executed.]

117. 1603. **Roman, Fray Antonio de San.**—Iornada y mverte del Rey Don Sebastian de Portvgal, sacada de las obras del Franchi, ciudadano de Genoua, y de otros muchos papeles autanticos por . . . . i Mongie de S. Benito, y professo de la cassa de S. Zoyl de Carrion. Dirigido al Cõdestable de Castilla, Duq̃ de Frias, &c., del Cõsejo de Estado de su Magestad, y su Presidẽte del de Italia, &c. Valladolid: 4to, pp. 176 + pp. 14 of Privilegio censura, licencia, aprovacion, Carta dedicatoria, prologo al Lector, etc.

118. 1603. **Abentarique,** Alcayde Abulcacim Tarif.—La Verdadera Historia del Rey Don Rodrigo, en la qval se trata la cvsa principal de la perdida de España, y la conquista que della hizo Miramamolin Almançor Rey que fue del Africa, y de las Arabias, y vida del Rey Iacob Almançor. Compuesta por el Sabio . . . . Nueuamente traduzida de la lẽgua Arabiga, por Miguel de Luna vezino de

Granada, Interprete del Rey don Phelippe nuestro señor. Çaragoça [Saragossa] 4to [in two parts, 118 + 108 + contents, imprint, dated 1602, though on both title-pages 1603 is given, arms, etc.]. A work of no value. Madrid: 1675 (reprint).

119. 1604. **Wilkins, George.**—Three miseries of Barbary; Plague, famine and Ciuille Warre; with a relation of the death of Mahomat [or rather Ahmad el Mansur] the late Emperour; and a briefe report of the now present wars between the three brothers. London, **W.W.**, 4to; no pagination.

120. 1606. **Escallon, Juan Vincenzo.**—Origen y descendencia de los serinissimos reyes Benemerines Señores de Africa, hasta la persona de D. Gaspar Benimerin, infanzón de Fez. Neapolis: 4to, pp. 60.

Another edition in 1626.

121. 1607. **Mendoça, Hieronimo de.**—Jornada de Africa, composta por H. de M. Lisboa: 4to.

Another edition . . . . "Copiado de ediçao de Lisboa de 1607 por Benito Joze de Sousa Farinha," in 12mo, was published at Lisbon in 1785, pp. 14 + 275 + 4 (Index). It is an account of Dom Sebastian's expedition.

122. 1607. **Mendoça, de Agostinho de Gavy de.**—Historia do famoso cerco que o Xarife pos a fortaleça de Mazagão, defendido pelo Capitan Mor della Alvaro de Carvalho no anno de 1562. Lisboa: 4to.

123. 1607. **Een Cort** ende Wvaerachhtich verhael vande ghedenckweerdighe gheschiedenisse in Barbaryen ende vanden grooten slach ontrent Maroques gheschiet, den 25 Aprilist deses jaers 1607, hebbende binnen Maroques inden tijt elf weken dry verscheyden Coninghen gheregheert. Leyden: 4to. (Black letter in part.) 6 pp., but without pagination. "Nac de Copie eerst gehedruckt in den Haghe," from which it would appear that there was an earlier edition printed at the Hague. But the copy in Posthumus' library catalogue, marked "No. 442, 's Hage, 1607," is inaccurately described. For it is now in Dr. R. Brown's collection, and is as above.

An account of the revolution in Morocco.

124. 1609. **Ro. C.[ottington ?]**—A true Historicall discourse of Muley Hamet's rising to the three Kingdomes of Moruecos, Fes, and Sus. The dis-ynion of the three Kingdomes, by ciuill warre, kindled amongst his three ambitious Sonnes, Muley Sheck, Muley Boseres, and Muley Sidan. The Religion and Policie of the More or Barbarian. The aduentures of Sir Anthony Sherley, and diuers other English Gentlemen, in those Countries, with other Nouelties. London: 4to, pp. 74, though unpaged [mixed Roman and black letter].

A very valuable original contribution to the history of Morocco. Among other particulars it gives an account of Sir Anthony Sherley's Embassy in 1604 from Rudolf II., Emperor of Germany, to Mowlai Abd-el-Aziz (Abu Farès = Bofares), one of the sons of Ahmed II. El-Mansur, who on the death of their father fought for the kingdom. This work, which is dedicated to Sir Robert Cotton of Cunnington, is largely reprinted in the paper in Purchas (No. 148). See also Lady Verney's "Memoirs of the Verney Family" (1892), vol. ii., pp. 60–68.

125. 1608. **Le Blanc, Vincent.**—Les voyages famevx du sievr Vincent Leblanc, marseillois, qu'il a faits depuis l'age de douze ans jusques à soixante, aux quatre parties du Monde: à sçavoir aux Indes Orientales & Occidentales, en Perse et Pegu. Aux Royaumes de Fez, de Maroc & de Guinée, & dans toute l'Afrique

intérieure, depuis le cap de bonne Espérance jusques en Alexandrie, par les terres de Monomotapa, du Preste Jean & de l'Egypte, aux isles de la Méditerranée & aux principales Provinces de l'Europe, &c. Rédigez fidellement sur ses mémoires et registres, tirez de la Bibliothèque de Monsieur de Peiresc, conseiller au Parlement de Provence, et enrichis de très curieuses observations, par Pierre Bergeron, Parisien. Paris: 4to. Another edition (a reprint), 1649, 4to, Paris. Another edition, Paris, 1658, "nouvelement reueu corrigé & augmenté par le Sr. Covlon," in 3 parts, pp. 1–202 + pp. 1–146 + pp. 1–109, each separately indexed. The portions which concern Morocco are chaps. xxii. and xxiii., pp. 122–147. He professes to have gone to Morocco with Don Guillern, sent by Henry III. as his "Ambassadeur ou Agent vers Fez & Maroc." A Dutch edition appeared at Amsterdam in 1654, 4to, pp. 116: "De Vermaarde Reizen, etc. . . . Nieu welyks door J. H. Glazemaker . . .". An English edition by F. Brooke, London: fol., 1660.

Le Blanc shares with Mendez Pinto the undeserved reputation of being what Congreve calls the latter, a "liar of the first magnitude." Butler's sneer in 'Hudibras' about the swashbuckler who had "traced countries far and near more than Le Blanc the traveller," has clung in the world's memory.

126. 1608. **Delisle.**—Une Relation du Royaume de Maroc et des Villes qui en dependent. (Harlay, No. 248, pp. 224 and 278.)

Letter addressed to Henry IV. (Thomassy.)

127. 1609. **Órden del Sr. Rey Catolico D. Felipe III.** comunicando á los Jurados de Valencia que la determinación tomada para la expulsión de los Moriscos la habia motivado entre otras cosas el haberse entendido que maquinaban en Constantinopla y Marruecos para ocupar nuevamente á España á fuerza de armas. Dada en S. Lorenzo á 11 de Setiembre. Colec. Abreu. (Duro.)

128. 1609. **Órden del Sr. Rey Catolico D. Phelipe III.** á D. Nuño de Mendoza, Gobernador de Tánger, avisándole la resolución tomada para la expulsión de los Moriscos de estos reinos, y prevsenir do les dejase pasar libremente á Berbería á los que aportasen en su distrito, sin hacerles daño ni vejación alguna y que procurase saber y avisase á dónde iban parar, sus designios y cómo eran recibidos: dada en Madrid á 4 de Octubre. Colec. Abreu. (Duro.)

129. 1609. **Capitulaciones** propuestas por Mahomet Xeque Xarife, Rey de los reinos de Maruecos, Fez y Sus, sobre la entrega de la fuerza y puerto de Larache, al Sr. Catholico D. Phelipe III., juntamente con la respuesta que des Orden de Su Majestad se puso á la márgen de Cada uno de sus Articulos: dada en Madrid á 9 Setiembre. Colec. Abreu. (Duro.)

130. 1609. **Bando** que mandó publicar en el reino de Valencia á 22 deSetiembre de 1609 el virey D. Luis Carrillo de Toledo, Marqués de Caracena, previniendo todo lo conviente á la salida, trasporte y seguridad de los Moriscos hasta su desembarco en la Costa de Africa. Colec. Abreu. (Duro.)

131. 1610. **Bando** mandado publicar en el Principado de Cataluña y Condado de Rosellón y Cerdaña, por el virey D. Hector Piñately, duque de Monteleón, para la expulsión de los Moriscos de aquella provincia y publicado en Barcelona á 29 de Mayo de 1610. En Limosin y Castellano. Colec. Abreu. (Duro.)

132. 1610. **Bando** que mandó publicar en el reino de Aragón el virey D. Gaston de Moncada, Marqués de Aitona, para la expulsión de los Moriscos de aquél reino, previniendo todo lo conveniente á su ejecución y al transporte de ellos: Dada en Zaragoza á 29 Mayo de 1610. Colec. Abreu. (Duro.)

133. 1610. **Cédula Real del Sr. D. Phelipe III.**, mandando publicar por bando la expulsión de los Moriscos de Castilla la Vieja y Nueva, Mancha y Extremadura, en que se contienen y repiten los motivos que dictaron esta resolución: dada en Aranda à 10 de Juillet 1610. Colec. Abreu. (Duro.)

134. 1610–21. **Curita, Geminimo.**—Annales de la Corona de Aragon. Çaragoça: 6 vol., folio.

135. 1610. **The Sultan** Moulai Zidan sent the Kaid Hamed ben Abdulla to Holland for the purpose of concluding a treaty with the States-General; it consisted of 18 Articles, and was ratified on the 24th of December. See Dumont, t. v.; Aitzema, t. i.

136. 1611. **Silva, Rodrigo de.**—Relación de los navios que tomó y quemó D. R. de S. al recorrer la Costa de Berberiá contra la escuadra de Muley Cedan. 'Acad. de la Hist. Papales de Jesuitas,' t. 132, núm. 13. (Duro.)

137. 1611. **Vasco Mousinho de Quevedo e Castello Branco.**—Alfonso Africano, poema heroico della prêza d' Arzilla e Tanger. Lisboa: 8vo. Another edition, 1786. (Renou.)

138. 1611. **Bericht welcher** Gestalt Niebevor drei Gebrüdere, Könige zu Fez und Morocco. Krieg gegen einander geführt. Cölln: 8vo. (Renou.)

139. 1612. **Eene Wonderlicke ende Vreemde Nieuwe Tydinghe,** gheschreven uyt Barbarien, hoe dat hem aldaer eenen nieuwen Coninck opgheworpen heeft, ghenaemt Muley Hamet Ben Abdala, hem titulerende Coninck van de twee, ende van de landen passerende China: Opwerper, door 't bevel Gods, om vrede in de wereldt te brenghen?: Gheloovighe in de wet Gods: een strijder teghen de ongheloovighe. Desen brief is gheschreven bij een Christen-Coopman, die aldaer woonachtig is, den weicken seght, selfs in persoone met eenighe ander Christen-Coopluyden, op ten xii July 1612, in de Tente van desen nieuwen Coninck gheweest heeft, en aldaer zijne presentie ghesien ende ghesproocken te hebben. Delft, Gedruckt bij Jan Andriesz: 4to.

140. 1613. **Late Newes out of Barbary,** in a letter written of late from a merchant there to a gentl. not long since imployed into that country from His Majestie. Containing some strange particulars of this New Saintish Kings proceedings, as they haue been very credibly related from such as were eye-witnesses. London: 8vo, pp. 18.

141. 1613. **Rojas, Juan Luis de.**—Relacion de algunos sucesos postreros de Berberia, salida de los Moriscos de España y entrega de Larache dirigida à don Fernando de Mascorenhas, Cavallero de la orden militar de Christo. Lisboa: 8vo. (Renou.)

142. 1614. **Lithgow, William.**—Totale Discourse of the rare adventures and painful perigrinations of long nineteen yeares Travayles from Scotland to the most famous kingdoms in Easte Asia and Affrica, wherein is entared an Exact Relation of the Lawes, Religion, Policies and Governments of all their Priests, Politicals and People. 4to.

Many editions; the first (*ut supra*) in 1614, but the completed work did not appear until 1632, "A most delectable and true Discourse of an admired and painefull Peregrination from Scotland to the most famous Kingdomes in Europe, Asia, and Affrica," sm. 4to. The 12th was published at Leith, 8vo, 1814, pp. 412, with portrait. It also appeared in Dutch: 'William Lithgouws 19 Jaarige Lant-Reyse naer de Vermaerde Koninckrijcken Europa, Asia ende Africa,' 1652, 4to, with very curious plates.

Part VIII. contains an account of his visit to Algiers and Tlemçen, whence he proceeded to Fez about 1617 with Mons. Chatteline, a French lapidary of Aix in Provence, and "certain merchants of Algiers that were going thither, being in all thirty passengers, with two Janizaries and a dragoman." He gives an account of Fez which bears out Leo's description of its prosperity, and also of its immorality.

143. 1614. **Aldrete, Bernardo José.**—Canónigo en la Sancta Iglesia de Cordoua. Varias Antigüedades de España, África y otras provincias. Amberes: 4to, pp. 640.

Beautifully printed, with copious index; it is a general history, with but little on the subject of Morocco.

144. 1614. **Guadalajara y Xauierr, F. M. Marcos de,** Religioso y General Historiador de la Orden de N. S. del Carmen.—Redicion y Destierro de los Moriscos de Castilla, hasta el Valle de Ricote con las Disensiones de los hermanos Xarifes, y presa en Berberia de la fuerça y puerto de Larache. Pamplona: 8vo, pp. 132.

The latter portion occupies from pp. 81 to 132, with the separate title, "Presa en Berberia de la famosa fuerça de Alarache por el Catholico y Amado Filipo deste nombre Tercero, Rey y Monarca de España."

145. 1615. **Orozco, Agustin de.**—Discurso historial de la presa del puerto de la Mamora. Madrid: 4to. (Duro.)

146. 1617. **Mocquet, Jean,** Garde du Cabinet des Singularitez du Roy au Tuilleries.—Voyages en Afrique, Asie, Indes Orientales et Occidentales. Divisez en six livres et enrichiz de Figures. Paris: 8vo, pp. 442.

A second edition, published in 1647, 8vo, pp. 442, and a third at Rouen in 1665. Dutch (Dordrecht, 1656), and German (1688, pp. 632, 4to), and English (1696) translations; French original reprinted, 1830. See also No. 312.

Book I. is devoted to his Voyage to the Court of Morocco and the Canary Islands. He touched at Cape Blanc and at Mazagan. In Book III. there is an account of his journey from Safi to Merakish in the character of a physician.

147. 1617–1625. **Purchas, Samuel,** "Parson of St. Martins neare Ludgate."—Hakluytus Posthumous. His Pilgrimes in 5 bookes (4 vol.). London: folio, pp. 1973.

The following articles connected with Morocco are in vol. ii.:—

Leo, John, Observations of Africa and a Description of the Kingdomes of Bugia and Tunis, the Land of the Negroes, and of the confines of Egypt; with an account of the People, Tribes, Languages, Seasons, Vertues, Vices, and other more general considerations of Africa (from Pory, *ut supra*).

Collections of things most remarkable in the Historie of Barbarie by Ro. C.

The Trading of the Moores into Guinee and Gago for gold ore or sandie gold. [This is a reprint from Ro. C.'s 'True Historicall discourse' (No. 124).]

African Possessions of the King of Spain and the Turke.

Smith, Capt. John, Travels and Adventures in divers parts of the World, throw France, Italie, and on the Sea Coasts of Europe, Africa, and Asia, with his Transylvanian Acts: begun about 1596.

Gramaye, J. B., Relations of the Christianitie of Africa and especially of Barbarie and Algier. 1619.

148. 1617. **Ro. C.**—How the Kingdome of Barbary came to Muley Hamet Xarif, the late deceased King, and the course of his Gouvernment; of his Sonnes and their behauiour; Sheck's misgouernment and imprisonment; Hamet's death. (Purchas, 'Pilgrimes,' vol. ii., pp. 851–873.)

149. 1617. **Leo Africanus.**—Observations of Africa and a description of the Kingdomes of Bugia and Tunis, the Land of the Negroes, and of the Confines of Egypt, with an account of the Peoples, Tribes, Languages, Seasons, Vertues, Vices, and other more general considerations of Africa. (Hakluytus Posthumous and Purchas His Pilgrimes, vol. ii., pp. 749.)

This is a mere reprint of parts of Pory's volume, No. 69.

150. 1618. **Remon.**—Historia general de la órden de Nuestra Señora de la Merced. Madrid: 4to.

In vol. i., pp. 324, 358, an account is given of the ransom in 1306–7 (705–6 A.H.) of 300 Christian slaves from Tetuan, Fez, Merakish, Tlemsen, and Algiers, by Raymond Albert, Prior-General of the Order of Mercy, and of the ransom in 1313 or 1321 (718–721 A.H.) by Guillermo Giraldo, Prior of the Order in Barcelona, and the famous Preacher Claude de S. Romans, of 236 slaves in Morocco. Among these was a Knight, Don Juan, who was on the point of apostatising and marrying an Imperial Princess. At pp. 444–450 the martyrdom at Fez of Julio de Puerto (at the end of the 14th century) is described, the offence of this Friar being the public preaching of Christianity. In 1402, 258 slaves were ransomed by Fathers Juan de Herrera and Bernard Arenys. Dennis de Mendoca and Severin de Paris (who was impaled and burnt in Algiers ten years later) rescued 104 captives, "et convertoient un grand rabbin." In 1411 Severin freed 140 unfortunates; Gomez Martinez, a Portuguese Trinitarian, who died in 1431, had in twelve redemptions bought back 2984 slaves (Calvo, Resumen de las prerogativas . . . de la SS. Trinidad . . y de los varones, &c. Pamplona: 1791, 3rd part, p. 209). Jean de Luca de la Merci freed 116, who entered Seville in solemn procession (Remon, p. 389); and Domingo, another Trinitarian, was the means of ending the cruel captivity of 150 Europeans. The Fathers de Sarmiento and de Segovia bought up 189 prisoners at Merakish and Fez, and two of their confrères, PP. de Valverde and Dominique, 124 at Merakish. Two hundred and four were credited to the exertions of Pierre Beuccord and Jean le Vasseur, while Diego de Gayangos paid the ransom for 500 who were at Fez in 1519 ('Tableau des Redemptions,' Paris, 4to, 1785; cf. Godard, p. 441). Other Religieux were about equally successful, showing to what an extent captures had been made from the opposite coast of Spain, though at that time piracy—in Morocco—was not at its height.

151. 1618. **Remon, El Padre F. Alonso,** Predicador y Coronista General.—Historia de la ordenanza de la Merced, Redencion de Cautivos. Madrid: folio, pp. 525 = 1050, alternate pages only being numbered.

152. **Bleda, el Padre Presentado Fray Iayme.**—Predicador general de la Orden de Predicadores, Calificador de la Inquisicion de Valencia.

Coronica de los Moros de España diuidida en ocho libros.

Valencia fol. pp. 1072; + Index, Contents, etc. Necessary for the History of Morocco.

153. 1619. **Edrisi.**—Geographia Nubiensis: id est, accuratissima totius orbis in septem Climata divisi Descriptio. Recens ex Arabico in Latinum versa a Gabriele Sionita et Joanne Hesronita. Parisius: 4to.

Contains the original Arabic with a Latin translation, but the term "Nubian Geography" is entirely gratuitous. See Nos. 95, 589.

154. 1619. **Lopes, Francisco.**—Verdadeira et santa historia das cinco martyre de Maroccos. Lisboa.

155. 1622. **Morales, J. B. de.**—Jornada de África del Rey D. Sebastián. Sevilla: 8vo. (Duro.)

156. 1622. **Gramaye, Jean Bap.**—Africæ Illustratæ Libri Decem in quibus Barbaria gentesque ejus ut olim et nunc describuntur. Historia Ecclesiastica . . . Marocci, Fessæ, . . . cum adjecto speculo miseriarum Barbaricam et mediis reducenti illuc Religionum et dabellandi Pyratos et Africa ergocendi, etc. Tornaci Nerviorum (Doornik): 4to, pp. 194.

Morocco (pp. 127–193) is largely taken from Leo and Marmol.

157. 1622. **A Dutch Embassy** under Ruyl went to Morocco to renew the treaty of 1610.

Jakob Van Gool (Golius), afterwards Professor of Oriental Languages in Leyden, accompanied this expedition, and by his knowledge of Arabic contributed greatly to its success. Golius—the successor of Erpenius—presented the Sultan with a New Testament and an Atlas in Arabic. He wrote a letter in such choice Arabic and beautiful caligraphy, that when he appeared at court he astonished Mowlai Zidan by scarcely understanding a word of his African vernacular, and by pronouncing the language so badly that they conversed in Spanish. He, however, received from the Sultan several Arabic MSS. and was permitted to make the plan of the Palace in Fez engraved in Windus' 'Journey to Mequinez,' p. 222, from "the original of which (as it was drawn by himself, with some explanations in Arabick) is now [1725] in the hands of Mr. Corbiere, who has been pleased to communicate it to me."

See Bayle, p. 558; Höst, p. 34; Godard, p. 482.

158. 1623. **Histoire** véritable de la mort soufferte par frère Bernardin, religieux de l'ordre de S. Augustin, pour avoir par ses predications converti deux mille infidèles à la foi Catholique en la ville et cité de Marque en Barbarie. Paris: 8vo. (Ternaux Compans.)

159. 1623. **Relación** de la felicisima victoria que **D. Blas de Meneses,** Capitán General de Mazagan, alcanzó en 1623. Granada. Dos hoj. de la Hist. (Duro.)

160. 1623. **Carta del Rey Felipe IV.** à Don Garcia de Toledo Ossorio sobre la defensa de la plaza de la Mamora y contestación de éste. Acad. de la Hist. Papeles de Jesuitas, t. vii. núm. 25. (Duro.)

161. 1623? **Alzamiento y pérdida de las Galeras** en la playa de la Mamora yendo al Socorro de dicha plaza. l. c. t. xxix., núm. 50.

162. 1624. **Coello de Barbuda, Luys.**—Empresas Militares de Lusitanos. Escriptas por . . . . criado de su Magestad, natural, y vesino de la Ciudad de Lisboa. Lisboa: 8vo, pp. 335.

163. 1625. **Twelve Views of Ceuta,** in the Bibl. Nat., Paris. One of them shows the gate by which the Portuguese entered. (Renou.)

164. 1625. **Vaz de Almada, Fr.**—Tratato do succeso que teve a naõ S. Joaõ Batista, e jornada que Fez a gente que della escapon desde trinta e tres graos no cabo da Boa-Esperança onde Fez Naufragio ate Zofala vindo sempre Marchando por terra. Lisboa: 4to.

165. 1625. **Purchas, Samuel.**—His Pilgrimage, or relation of the world and the religions observed in all ages and places, &c. London: 9 books, in 1 vol. folio, pp. 1047.

This is a compiled work; a general geography, in Purchas's own words. Many editions have been published; the fourth is usually catalogued as vol. v. of the 'Pilgrimes,' but the two works are essentially different. In 'His

Pilgrimage' there is a brief account of Barbary, Numidia and Libya, for which he is much indebted to Leo. Last edit. 1626

166. 1625. **Elmacinus** (Jergis ibn El-Amed, called El-Makin).—Historia Saracenica qua res gestæ Muslemorum inde a Mohammede Arabe vsque ad . . . . . fidelissime explicatur, &c. Lugduni Batavorum, fol.: French Trans. Paris, 1657: 4to.

167. 1626. **Memoire du Chevalier de Rasilly.** A Monseigneur l'illustrissime Cardinal de Richelieu, Chef du Conseil du Roy et Superintendent du Commerce de France.

This MS., dated Pontoise, 26 Dec. 1626, exists in the Bib. Sainct-Geneviève (MSS. L. f. 36) and consists of 74 pages. Printed in the 'Rev. de Géogr.' t. xix., p. 374 *et seq.*

He prays the Cardinal to equip a fleet "qu'ils aillent dellivrer les Chrestiens esclaves quy sont en Barbary;" and further:—"Ceulx du Royaulme de Marroque, Sallé et Toutouan ont commancé d'armer par mer depuys huit ans et ont pris plus de six mil chrestiens et quinze millions de livres."

168. 1626. **Origen** y descendencia de los reyes Beni Merines, Seigneurs d'Afrique. Napoles: 4to.

There is a legend to the effect that the Beni Marine or El-Merin, one of the Morocco dynasties (1217–1471), were descended from the Genoese family of the Marini.

169. 1626. **Cédula Real** de 3 Mayo de 1626, ordenando al Almirantazgo no embarace que del puerto de Zalé se traigan á estos reinos los frutos de aquella tierra y lleven á ella todos y cualesquiera frutos y mercaderías de todos géneros, como no sean de las que las leyes prohiben sacar, ni las de rebeldes ó que los Moros hayan tomado por presa. Abreu, 'Colec. de Tratados.' (Duro.)

170. 1628. **Relacion** del Martirio que dieron los Moros en Tetuán á Francisca Trigo, Morisca, natural de Ávila. Madrid: fol. (Duro.)

171. 1628. **Larraspuru, Tomas de.**—Carta del General D. Tomás de Larraspuru dando cuenta de la gran presa que hizo en la Artillería, pólvora y municiones del enemigo que estaba sobre la Mamora. Imp. en 2 fol. en Sevilla. (Acad. de la Hist. Papales de Jesuitas, tomo 18, num. 42.) (Duro.)

172. 1629. **Coutinho, Gonçalo.**—Discurso da Jornada de D . . . . a Villa de Mazagam e sev governo nella. Lisboa: 4to, pp. 175.

173. 1630 [actually August 1629]. **Smith, John.**—The Trve Travels and Adventvres and observations of Captaine —— in Europe, Asia, Affrica ['Affricke' in the text] and America, from Anno Domini 1593 to 1629. His Accidents and Sea-fights in the Straights; his Service and Stratagems of warre in Hungaria, Transilvania, Wallachia and Moldavia, against the Turks and Tartars; his three single combats betwixt the Christian Armie and the Turks. After how he was taken prisoner by the Turks, sold for a Slave, sent into Tartaria; his description of the Tartars, their strange manners and customes of Religions, Dress, Buildings, Warres, Feasts, Ceremonies, and Living; how he slew the Bashaw of Nalbrits in Cambia, and escaped from the Turkes and Tartars. Together with a continuation of his generall History of Virginia, Summer-Iles, New England, and their proceedings since 1624 to this present 1629: as also of the New Plantations of the great River of the Amazons, the Iles of St. Christopher, Mevis, and Barbadoes, in the West Indies. All written by Actuall Authours, whose names you shall finde along the History. London: fol., pp. 60.

The substance of this work appeared first in 1625 in Purchas's 'Pilgrimes,' vol. ii. (No. 148).

A Dutch edition by J. Sanderson, 'Seer gedenckwaardige vorjagien,' &c. [an abridgment]. Amsterdam: 4to, 1678.

Another Dutch edition, No. 73 of 'Naaukerige Versameling' of Pieter Van der Aa. Leyden: 8vo, 1706.

A third Dutch issue in same series. Leyden: 8vo, 1707.

A further Dutch edition: 'Aaanmerkenswaardigste Zee,' Deel 5. Leyden: fol., 1727.

Churchill's Voyages, vol. ii. London: fol., 1732, 1744, 1755.

An American edition, reprinted with the 'Generall History of Virginia' at Richmond, Virginia: 8vo, 1819.

But the best and most accurate, with a complete Bibliography, is that of Professor Arber in the 'English Scholars' Library' Birmingham, 1884, 8vo, pp. 805–916. Smith offered his sword to Abd-[illegible]aziz, "understanding of the warres in Barbarie," and with that object went (p. 34) in 1604 to the city of Merakish. He gives a curious account of the Golden Balls on the Kutubia, of the many free English workmen then in the Sultan's employment, among them being Henry Archer, a watchmaker, "and Master John Bull," who were well paid and treated, and apparently high in favour with the soldiers. He also gives an account of Fez (p. 36), mentions "Magadore" (p. 41), which shows that it had then got the modern name, and (p. 59) gives a curious account of the "bad life, qualities, and conditions of Pyrats," from which it appears that the Morocco pirates learnt their trade from the English rovers driven out of the European seas.

174. 1630. **Bontier, Pierre.**—Histoire de la premiere descouverte et Conqueste des Canaries, faite dès l'an 1402 par Messire **Iean de Béthencourt,** Chambellan du Roy Charles VI., escrite du temps mesme par **F. Pierre Bontier,** Religieux de S. François, et **Jean de Verrier,** Prestre, domestiques dudit Sieur de Béthencourt, et mise en lumiere par M. Galien de Béthencourt, Conseiller de Roy en sa Cour de Parliament de Roüen, plus un Traicte de la Navigation et des Voyages de Descouverte et Conqueste modernes et principalement des François (par Bergeron). Paris: 8vo, pp. 208 + 303. See No. 1164.

An English translation by R. H. Major was published by the Hakluyt Society in 1872, 'The Canarian, or book of the Conquest and Conversion of the Canarians in 1402,' London, 8vo. (with Introduction, pp. 55, portrait and two plates); and a Spanish one by P. M. Ramirez in 1847, 'Historia del primer descubrimiento y conquista de las Canarias principiada en el año de 1402,' &c.

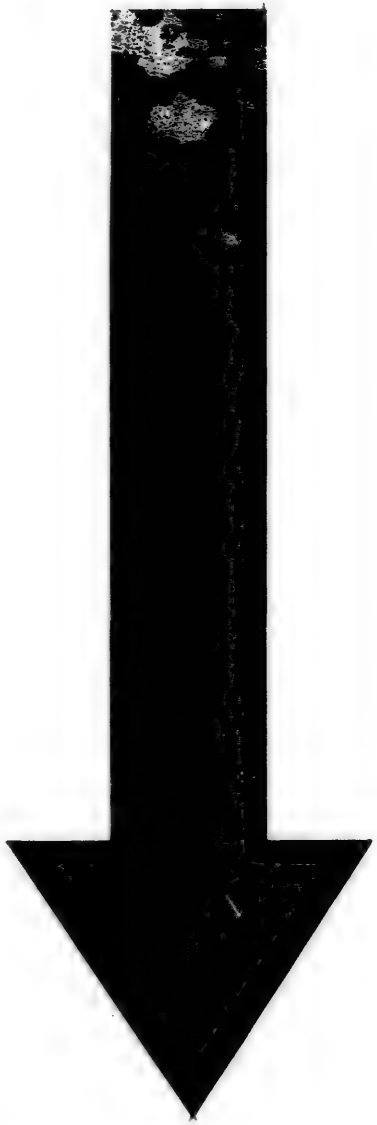
175. 1630. **Mesa, Sebastian de.**—Jornada de Africa por el rey Don Sebastian y union del reyno de Portugal á la Corona de Castilla. Barcelona: 4to, pp. 169.

176. 1630. **Traité** de Trève entre Louis XIII., Empereur de France & celui de Maroc, par Monsieur le Chevalier de Raselli, & les Capitaines & Gouverneurs de Salé & autres Villes du Roiaume de Maroc. Fait à la Rade de Salé le 3 Septembre 1630. 4to, pp. 4. (Tab. des Étab. Franç. en Alg. 1841, p. 418.)

This treaty is dated 3rd September; 16 additional articles were signed on the 24th of the same month.

177. 1631. **Traité** de Paix entre Louis XIII., Empereur de France & celui de Maroc. Fait à Maroc le 17 Septembre 1631. 4to, pp. 3.

The treaty was made by the Chevalier de Razelli and Admiral du Chalard.



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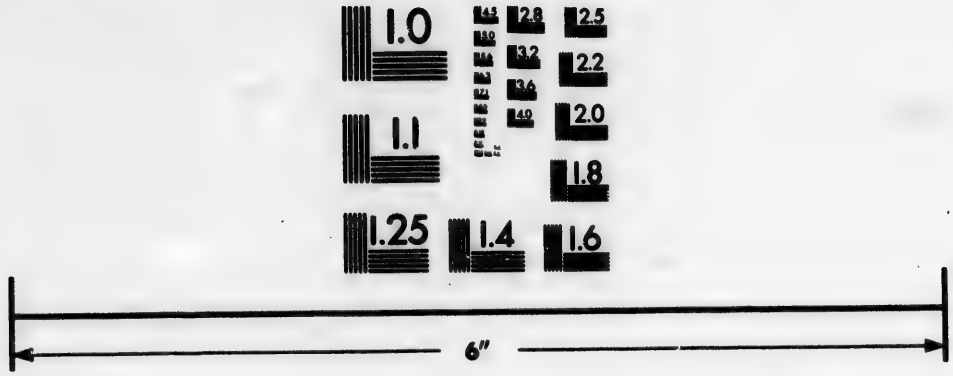

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178. 1631. **Traité** entre Louis XIII., Empereur de France, & Molei Elgualed, Empereur de Maroc. Fait à la Rade de Saffi le 24 Septembre 1631. 4to, pp. 2.

This also is signed by De Razelli and Du Chalard.

179. 1631. **Bref** et fidèle récit des inhumanités et barbares cruautés de Moley Abd-el-Melec, empereur de Maroc, dernier décedé, exercées à l'endroit tant des pauvres Chrétiens que de plusieurs de ses domestiques. Paris: 8vo. (Renou.)

180. 1632. **Ioannis Leonis Africani** Africæ Descriptio ix. lib. absoluta. Lug. Batav. [Leyden]: Apud Elzevir, Ao. 1632. With an engraving of an emblematical character on the title-page. 12mo, pp. 80, with 16 pp. index at the end; in two parts, but with continuous pagination.

This is the Latin edition most frequently met with. It is a verbatim reprint from Florianus (No. 50), but without the slightest acknowledgment of the source whence it was derived. It was issued in 1639 in 2 vols. by the same publisher, and evidently from the same type.

181. 1632. **Armand, Jean.**—Voyages d'Afriqve faicts par le commandement dv roy. Ou sont contenues les nauigations des Frãçois, entreprises en 1629 & 1630 soubs la conduite de Monsieur le Commãdeur de Razilly, ès costes Occidentales de Royaumes de Fez & de Marroc; le traicté de paix faict auec les habitans de Sallé & la deliurance de plusieurs esclaues François. Ensemble la description des susdit Royaumes, Villes, Coustumes, Religion, Mœurs & commoditez de ceux dudit pays. Le tout illustre de curieuses obseruations par Iean Armand, Turc de Nation, lequel a eu employ ausdjts voyages. Paris: 8vo, pp. 320, with dedication (pp. v.) to Cardinal de Richelieu.

In an edition of 1631 (18mo) Armand is described as "dit Mustapha, Turc de nation, Chirurgien de Mgr. le Comte de Soissons."

This work shows the great interest which Richelieu attached to the maritime preponderance of France, and to commercial intercourse with Morocco.

182. 1633. **Harrison, Rev. John.**—The tragical life and death of Muley Abdala Melleck, the late King of Barbarie. Delft: 4to, pp. 24.

The author was one of the suite of Frederick, King of Bohemia.

183. 1633. **Moreira Pita, Manuel.**—Poema Africano. Sucesos de D. Fernando Mascarenhas, del Consejo de S.M., General de Septa, en el discurso de seis años que lo fué de Tangér. Cadiz: 4to, pp. 111. (Duro.)

184. 1634. **Tvrcici** Imperii Statvs. Accedit de Regn. Algeriano atque Tunetano Commentarius. Leyden: 16mo. Preface, Contents, privilege, pp. 6 + pp. 363 Text + pp. 5 Index.

This extremely rare work is often considered an excerpt from Leo Africanus, No. 45. It is, however, a compilation from Montalbanus, Honorium, Malagucci, Busbequis, Leonclavius, Soranzi and other writers, on Turkish affairs, money, mode of measuring time, etc. The Appendix (pp. 307–363) contains an account of Tunisia taken from Gramaye, and of Algeria from Leo and other authors, though without acknowledgment. From the privilege granted to the Elzevirs dated 15th May 1626, it appears that the full title of the book was to be "Turcici Imperii status seu discursus varii de rebus Turcarum."

185. 1635. **Traité** entre Louis XIII., Empereur de France & de Navarre, & Moulei Elgualed, Empereur de Maroc, Roi de Fez, de Suz, & de Salé, &c. Fait en la Ville de Salé, le 7 Sept. 1635. 4to, pp. 4.

This is signed by Messire Priam Pierre du Chalard.

A special "Acceptation faite par les Gouverneurs & Habitans de Salé des Articles de la Paix" is added.

See also 'Tabl. des Étab. Français en Algérie,' 1841, p. 418.

186. 1637. **The Arrivall** and Intertainments of the Embassador Alkaid Ben Jaurar Abdella with his Associate Mr. Robert Blake from the High and Mighty Prince, Mulley Mahamed Sheque, Emperor of Morocco, King of Fesse and Susse. Description of some Rites, Customes & Lawes of these Affrican Nations, etc. Likewise God's exceeding mercy manifested in the happy redemption of three hundred and two of His Majesty's poore Subjects who had beene long in miserable Slavery at Salley in Barbary. London: 4to.

187. 1637. **Fitz-Geffery, Charles.**—Compassion towards captives, our brethren and countrymen who are in miserable bondage in Barbarie. Urged and pressed in 3 sermons, preached in Plymouth in October 1636. Oxford: sm. 4to.

188. 1637. **Dunton, John,** Mariner, Master of the Admirall called the Leopard.—A True journal of the Sally fleet, with the proceedings of the voyage. Whereunto is annexed a List of Sally captives' names, and the places where they dwell, and the description of the three Townes in a card. London: 4to, no continuous pagination, with map by Richard Simpson. Also in the Harleian Collection of Voyages and Travels, vol. ii. p. 491.

189. 1637. La Prise de l'ancienne ville de Salé en Afrique par la flotte d'Angleterre. Paris: 4to, pp. 6.

Extrait des 'Extraordinaires de Mercure français.'

190. 1637. **Dan, le R. P. Fr. Pierre,** Bachelier en Theologie de la Faculté de Paris, Ministre & Superieur du Conuent de l'ordre de la S. Trinité & Redemption des Captifs fondé au Chasteau de Fontaine-bleau.—Histoire de Barbarie et ses Corsaires, des Royaumes et des Villes d'Alger, de Tvnis, de Salé & de Tripoly. Divisee en dix livres ov il est Traitté de levr Govvernement, de leurs Moeurs de leurs Cruautez, de leurs Sortileges, et de plusieurs autres particularetez remarquables—Ensemble des grandes miseres et des crvels tourments qu'endurent les Chrestiens Captifs parmy ces Infideles. Paris: 4to, pp. 514. A second edition folio, 1649, pp. 489. A Dutch translation by G. van Brockhuijsen, Amsterdam, 1648. (No. 299)

The author was for nearly half a century a Trinitarian father, engaged in the release of captives.

Relation III. Chap. I. p. 200. Des Corsaires de la Ville et republique de Salé.

Chap. II. p. 208. De la Ville de Salé.

Chap. III. p. 211. De quelques traittez avec les Corsaires de Salé.

Chap. IV. p. 228. Du Royaume de Maroc.

Chap. V. p. 231. De la Ville de Maroc.

Chap. VI. p. 235. De quelques traittez entre les Roys de France et Maroc.

Chap. VII. p. 245. Du Royaume de Fez.

Chap. VIII. p. 248. De la Ville de Fez.

Relation IV. Chap. IV. p. 259. De la Ville de Tetuan.

There are several other chapters regarding the manner in which the Corsairs equip their vessels, make prizes, and regarding the subject of Christian slavery generally. It is a standard work on the Barbary States.

191. 1638. **Cunha, José da.**—Traslado de una carta embiada á esta villa de Setúbal de D. Joseph de Acuña, Caballero del hábito de Christo, á un amigo suyo, dándole cuenta de una gran batalla y feliz victoria que han tenido los Cavalleros

portugueses en Melilla, Ceuta, Mazagan y Tánger, Costa de Africa, á los 7 dias del mes de Octubre deste presente año 1638. Madrid: fol.

192. 1641. **Ali Ibn Sufyan.**—Histoire des advantures guerrières d'Almancor, Roy d'Arabie. Traduite d'Espagnol par le Sieur de Vieux Maisons. Paris: 8vo.

Another translation:—La vie du Roy [Jacob] Almansor [translated by F. D. Obeilh]. Chez Daniel Elsevir. Amsterdam: 12mo, 1671.

193. 1641. **Vasconcellos, Antonio Manoel de.**—África conquistada pelos portugueses. Lisboa: en fol. (Duro.)

194. 1641. **Liedekerke,** the Dutch Admiral, conducted an Embassy to Morocco. See No. 972.

195. 1642. **Newes** from Sally; of a strange delivery of foure English captives from the slavery of the Turkes. London: 4to, p. 6.

196. 1642. **Baena Parada, J. de.**—Vida del Rey Don Sebastián de Portugal y jornada que hizo á las conquistas de África. Madrid: 4to. (Duro.)

197. 1643. **D'Avity, Pierre,** Seigneur de Montmartin.—Description générale d'Afriqve, seconde partie dv monde. Avec tovs ses Empires, Royavmes, Estats, et Répvbliques. Où sont deduits & traictez par ordre leurs Noms, Assiette, Confins, Mœurs, Richesses, Forces, Gouuernment & Religion; Et la Genealogie des Empereurs, Roys & Princes Souuerains, lesquels y ont dominé iusques à nostre temps. (Morocco is treated at pp. 54–144.) Paris: folio, pp. 621.

Nouvelle édition, reveue, corigée et augmentée par Jean Baptiste de Rocolls, conseiller et aumonier du Roy, et Historiographe de S.M. Paris: 1660.

198. 1643. **Rebelion de Tanger** por los portugueses año 1643, y noticias de los sucesos de aquella plaza. MS. Bib. Nacion., Madrid. (Duro.)

199. 1643. **Asantar, Conde de.**—Carta á Luis de Cyanguren de lo que pasaba en Tánger año de 1643. MS. en la Bib. Nac. (Duro.)

200. 1644. **[François, le Père d'Angers.]**—Histoire de la Mission des pères capucins de la province de Touraine au royaume de Maroc en Afrique, par les ordres du R. P. Joseph de Paris, Predicateur Capucin, Carminaire Apostolique des Missions Etrangères. [In the first edition the Author is given simply as "F. F. D. A. C. I."] Niort: 8vo.

Reprinted Rome, 8vo, 1888, pp. 183: "L'Histoire de la Mission des Pères Capucins de la Province de Touraine à Maroc, 1624–1636, par le P. François d'Angers. Réimprimée d'après l'Edition originale par les soins du P. Apollinaire de Valence."

201. 1644. **Ocana, Fr. Gomés de.**—Epitome del Viaje que hizo á Marruecos el P. Francisco de la Concepción. Sevilla: 4to. (Duro.)

202. 1648. **Le Blanc, Vincent.**—Les Voyages Fameux qu'il a faits depuis l'age de douze ans jusques à soixante aux quatre parties du Monde .... le tout recueilly des Memoires par le Sieur Coulon. Paris: 4to.

203. 1650. **Birago Avogadro, Dr. Gio. Battista.**—Historia Africana della divisione dell' impero degli Arabi. E dell' origine, e dei progressi della Monarchia de' Mahometani distessa per l'Africa, e per le Spagne. Venitia: 4to, pp. 4 + 445.

It begins with the year 622 A.D., and does not extend beyond 1007.

204. ——— A French translation by M[ichel] d[e] P[ure]. Paris, 1666: 18mo, pp. 262. No. 235.

205. 1651. **Torresvedras, Conde de.**—Consultas y cartas del . . . sobre la expedición de Tánger en 1651. MS. Bibl. Nacion., Madrid. (Duro.)

206. 1651. **Tractaet** van vrientschap ende verbintenisse Besloten den negenden Februarii 1651 tusschen de Hoogh Mogende Heeren Staten Generael vande Geunieer de Nederlanden ter eenre; ende de Heeren Gouverneurs ende Superieuren vande Steden van Salé en Barbarie, ter andere zyde. 's Graven-Hage: 4to, pp. 8 [no pagination].

207. 1653. **Procopius of Cæsarea.**

Many editions of the original exist subsequent to 1553; but the best is that of Dindorf in the 'Corpus Scriptorum Historiæ Byzantiæ,' 3 vols., Bonn, 1833–38. Critical remarks of a valuable character may be found in W. S. Teuffel's 'Studien und Charakteristiken sur Literaturgeschichte,' Leipzig, 1871, and F. Dahn's 'Prokopius von Cæsarea,' Berlin, 1865. The only English translation is that of **Sir Henry Holcroft**, 'History of the Warres of the Emperor Justinian,' 8 books. London: folio, 1653. An exceedingly rare volume. There is a French translation: 'Procope de la Guerre contre les Vandales. Paris, 1670. See No. 12. Also another by **Dureau de la Malle** in 'Manuel Algerien,' pp. 211–325.

208. 1653. **Moustier, Père Arthur du.** — Le martyrologe des franciscains. Paris: 4to.

At p. 452 an account is given of the martyrdom of Leon, Hugon, Dominique, Jean, and Electus, during the reign of El-Mamun (Edris III., Abu-l-O'la), about the year 1233.

209. 1654. **Chaulmer, Charles** (Conseiller du Roy et Historiographe de France).—Le tableav de l'Afrique ov sont représentéz les Royavmes, Républiques, Principautés, Îles, Presqu Ilez, Forts, & autres places considerables, de cette Seconde Partie du Monde. Auec quelques relations succinctes des progrez que font les RR. PP. de la Compagnie de IESVS, en la conuersion des Infideles & l'avancement de nostre S. Foy Catholique, dans les terres les plus éloignées. Paris: 12mo. pp. 359, with a double-columned Index of pp. 39, and pp. 2, Extraict du Priuilege du Roy, from which the author's Christian name is obtained. Morocco ("Marroc") occupies from pp. 25–79 of the very rare little volume, and is largely an abridgment without acknowledgment from Marmol, who again puts Leo under contribution.

210. 1654. **La Miraculeuse** rédemption des Captifs faite à Salé, Coste de Barbarie. Paris: 8vo. (Renou.)

211. 1654. **Le Blanc, Vincent.**—De Vermaarde Reizen van de Heer Vincent le Blanc van Marsilien. Die hy sedert d'ouderdem van veertien jaren, tot aan die van zestig, in de vier delen des Werrelts gedaan heeft, etc. Nieuwelijks door J. H. Glazemaker uit de Fransche in de Nederlantsche taal bestaalt en met tresselijke Kopere Platene vorciert. Amsterdam: 4to. See No. 202.

212. 1654. **Tabula Peutingeriana,** edit. G. Harini, Amst. Also 'La Table de Peutinger d'après l'original conservé à Vienne, par Ernest Desjardins.' Paris: 1869. See No. 1936.

213. 1656. **Sanson, N.,** d'Abbeville, géographe ordinaire du Roy.—L'Afriqve en plvsieurs cartes nouvelles, et exactes; & en divers traictes de géographie et d'histoire, &c. Paris: 4to. Another edition, 1662, pp. 96; Marocco, pp. 9–21, contains a considerable amount of original information.

These beautiful maps were copied into Blome's 'Geographical Description of the Four Parts of the World,' 1679, which is to a large extent a copy or condensation of part of Sanson's work.

214. 1657. **Nader Tractaet** van vreede ende vriendtschap, Besloten den 22 Marti 1657, tusschen de Hoogh. Mog. Heeren Staten Generael der Vereenighde Nederlanden, ter eenre, ende den Prince ende Heere van de Steden en Landen van Salé, ter andere zijde. Met de Elucidatie ende Ampliatie van dien, in den Hage gemaeckt en gesloten den twee en Beschrijving der Afrikaansche kusten en vooral van het eiland St. Thomas. 's Graven-Hage: 4to.

215. 1659. **Embassy** sent by "les Roys de Maroc et de Fez et le Seigneur de Salé aux Etats Generaux pour renouveller l'alliance faite entre eux et les Provinces unies l'an 1650, et confirmée par M. l'Amiral Ruiter l'an 1657." See Pétis de la Croix [No. 304], t. i., p. 470.

216. 1660. **Matham, Adrien.** See No. 972.

217. 1661. **Lawes and ordinances of War,** established for the better governing His Majestie's forces in the Kingdoms of Sus, Fez, and Morocco, under the command of his Excellency the Earl of Peterborough. London: folio, pp. 20.

In this is contained the duty of soldiers to God, to his Majesty, duties in general, duties to superiors, moral duties, duties of a soldier regarding his arms, in marching, in camp, in action, &c. A copy of this is contained in Morocco Archives, No. 1. Quoted also by Davis, No. 1740.

218. 1661. **Instructie** voor den Admirael Cortenaer. Om met twintigh Fregatten te gaen Kruyssen op de Portugesche ende andere Roovers. [No place, printer, or publisher.] "Naer de Coppe, 1661." 4to, pp. 6 [no pagination]. Black letter. See No. 220.

These are general instructions how to deal with the Portuguese and other rovers, those of Barbary included, drafted by their High-Mightinesses the States-General of Holland to Admiral Cortenaer in 1661.

219. 1661. **Artyckel-Brief** voor Vloot onder den Admirael de Ruyter gedestineert tegens de Turcken. t'Alcmaer: 4to, pp. 6 [unpaged], n. d.; but from internal evidence 1661.

It forms the instructions for De Ruyter in his cruise against the Tunisians and Algerians, but applies also to all the Barbary rovers. The title is in Roman; the text in black letter.

220. 1662. **Advys** vande Algemeene Gedeputeerde vans Lants Admiraliteyts Collegien Berechten op het naerder aenschryven vanden Vice Admirael de Ruyter, wat met de Turcken van Barbaryen diende gedaen. Rotterdam: 4to, pp. 6, the title being paged 1.

These are instructions in addition to those in No. 218.

221. 1662–74. **Courts Martial,** Admiralty proceedings, garrison orders, &c., 1662–1674. Rawl. MS., Bodleian Library, C. 423. C. 423, 145 folios.

222. 1662–1675. **Amounts of Money paid for Tangier,** 1662–1675. l. c. A. 191, fol. 38; also 174, fol. 450.

223. 1662. **Pepys, Samuel.** See No. 545.

224. 1662. **Historia de Tánger.** Sucesos de Tánger con portugueses, ingleses y moros año 1662. MS. Bibl. Nacion., Madrid.

225. 1663–69. **Tangier.**—The following Rawl. MSS., fully described in the

Rawlinson Catalogue, occupying 2 cols. of the Index under *Tangier*, relate to "Contract with Sir H. Cholmeley, etc., for building the mole, 1663;" "Orders of Council, 1669," "Papers concerning victualling," Charters, Orders, Letters, Addresses, Proceedings of Commissioners, &c.:—

Rawl. MSS. *A.* 341. *A.* 410. *A.* 184. *A.* 342. *A.* 257.
C. 423. *C.* 353. *A.* 174. *A.* 183.
A. 191. *A.* 185. *A.* 423. *A.* 256.
A. 190. *A.* 181. *A.* 255. *A.* 196.

The Tanner MSS., also in the Bodleian Library, have several papers relating to Morocco and Tangier.

226. 1664. **A Description of Tangier,** the country and people adjoyning, with an Account of the person and government of the kingdome of Gayland, the present Usurper of Fez; and a Short Narrative of the Proceedings of the English in those parts. Whereunto is added the Copy of a letter from the King of Fez to the King of England, for assistance against his rebellious subjects and another from Gayland to his sacred majesty Charles the Second, with Divers Letters and Passages worthy of Note. Translated from the Spanish into English and published by Authority. London: 4to, pp. iv. + 34, with equestrian portrait of Guyland alias Gayland (Ghailan).

227. 1664. **A Brief Relation** of the Present State of Tangier, and of the Advantages which his Excellence the Earle of Tiveot has obteyned against Gayland. London: 4to, pp. 8.

A pirated edition of the same pamphlet (without printer or publisher's name) was issued in Edinburgh in the same year, with a few slight alterations in the spelling, e.g. "obtained" for "obteyned," &c.

228. 1664. **Instructie** vande Hoogh-Mogende Heeren de Regenten der Vereenich de Nederlantsche Republijque, voor d'Opperhoofdes Commandeur en de Capitaynen, resorterenden, onder de respective Collegien ter Admiraltiteyt, gedestineert tot beveylinge van de Middellantsche-Zee, ende suppressie vande Roovers aldaer grass eerende. [No place, printer, or publisher.] 4to, pp. 7.

Title Roman; text black letter.

General directions by their High-Mightinesses the Regents of the United Batavian Republic for treating rovers who might be encountered.

229. 1664. **Instructie** van de Ho: [oogh-] Mo: [gende] Heeren Staten Generael Vereenichde Nederlanden, voor Johan Bartram van Mortaigne, Gedesigneerde Consul Generael op de Custe van Barbarien, ende Mr. Gilbert de Vianen, Fiscael over's lants Vloote naer Algiers ende Tunis, waer naer sy hun fullen hebben te reguleren. Benessens een grondigh, ende bondich berecht, op de vrage, of de Christenen vry staet handelingen van vrye Commertie te maken, met Turcken, ende Barbarische volckeren. [No place, printer, or publisher.] 4to, pp. 19.

It contains quite a little sermon on the iniquity of (Christian) slavery, plentifully interspersed with Latin quotations and extracts from the Koran and the Bible, addressed to the "Barbarische Volckeren" generally; those of Morocco included.

230. 1664. **Extraordinaire** du xxvii juin 1664, contenant ce qui s'est passé entre les Anglais et les Maures à Tanger, et la suite des autres affaires d'Angleterre, avec les Hollandais, et ceux d'Algier, le tout en une lettre de Londres. 4to, pp. 9.

231. 1665. **Leo Africanus.** Pertinente Beschryvinge van Africa Met alle de Landen, Koningrijken, Steden, Volken, Gewoonten Gedierten, Vogelen, Boom- en

Aaard-vruchten die daar zijn. Mitsgaders De Koningen die daar geregeert, ende de Oorlogen die sy gevoert hebben, van den jare 1600 af. Getrokken en vergadert uyt de Reys-boeken van Johannes Leo Africanus. Met Kopere Platen verciert. Hier neffens is by-gevoegt een pertinente beschryvinge van de Kuste van Guinea, soo als die hedensdaags bevaren word, en de Handelinge die daar op e Gout-kust word gedreven, beginnende met het xvii. Cap. Amsterdam: 4to, pp. 320 + pp. 5 Index.

This book is dedicated in a very laudatory preface, signed by the Publisher, to the Admiralty Committee of Rotterdam. The map is a copy of that published by Jodocius Hondius, and the copper-plates are for the most part reproductions of those in the French version of Leo (No. 49). The volume is divided into 22 chapters, the first nine (pp. 1–225) of which correspond to the nine books of Leo. The others are occupied with compiled matter, in many cases containing curious facts of much value, relating to the Moorish sovereigns, the trade of the Moors with Guinea and Gago, the different settlements along the African coast, and particularly with the Dutch commerce in the West African settlements. This translation of Leo, apparently by the publisher, Arnout Leers, is from Florianus' version.

232. 1665. **Les Estats**, Empires, Royaumes et Principautez dv Monde, Representez par l'ordre, et veritable description des Pays, Mœurs des Peuples, Forces, Richesses, Gouvernments, Religions, Princes, Magistrats, et Souverains, qui ont gouuerne et gouuernent auiord'huy châque Estat, selon que le tout subsiste à present, apres la mort des Princes, et les changements qui sont arriuez à l'occasion des guerres dernières, par le Sieur D. T. V. Y. gentil-homme ordinaire de la chambre du Roy. Geneve: folio, pp. 930 and 28.

233. 1665. **Genealogia** del Serenissimo D. Filippo d'Africa, Principe di Fessa, e di Marocco, scritta con l'occasione della sua venuta a Roma. Roma: 4to, pp. 15, with a genealogical tree.

A copy of this is contained in Morocco Archives, No. 1.

234. 1665? **Translation** of a Letter from the King of Morocco to the King of England. Harleian MSS. in B. M., No. 2104.

235. 1666. **Birago Avogadro, J. B.**—Histoire Africaine de la division de l'empire des Arabes, et de l'origine et du progrès de la Monarchie des Mahométans dans l'Afrique et dans l'Espagne; écrite en Italien, et mise en Français, par M. M. D. P. (Michel de Pure). Paris: 12mo.

The Italian text was published at Venice in 1650: No. 203.

236. 1666. **Articles of Peace** concluded and agreed between His Excellency the Lord Bellasyse, H.M. Governor of this City and Garrison of Tangier in Africa, &c., and Cidi Hamet Hyder ben Ali Gayland, Prince of West Barbary, &c. The second of April 1666. London: sm. folio, pp. 8.

A copy of this exists in the Public Record Office, No. 2138. "Gayland" or Ghailan is elsewhere styled:—

عبد الله احمد بن علي غيلان. See p. 228.

The superiority of this agreement to that concluded with the Earl of Tiveot is duly set forth.

237. 1666. **Alfano, Carlo.**—Vera relazione della felice e gloriosa vittoria ottenuta dall'armi cattoliche del re de Spagna, Carlo II., sotto la piazza d'Alarache in Africa. Roma: 4to.

238. 1667. **De Voornaemste Steden der Werelts.** (The Principall Cities of the World; known as G. van Schagen's collection.) Amsterdam: oblong 4to.

No. 84 is a view of *Marocco*; No. 86 of *Sales*, with a naval action going on; No. 87 of *Tangier*.

239. 1668. **Dapper, Olf.**—Naukeurige beschrijvinge der Afrikaensche Gewesten von Egypten, Barbaryen, Lybien, Biledulgerid, Negroslant, Guinea, Ethiopiën Abyssinie, vertoomt in Benamingen, Grenspalen, Revieren, Steden, Gewassen, Dieren, Zeeder, Drachten Talen, Rijkdommen, Godsdiensten en Heerschappyen, etc. Amsterdam: folio, in three sections, pp. 428 + 349 + 121, 44 maps and plates, and many figures in the text. Morocco occupies pp. 205–265 of the First Section. A second edition 1676. French translation, 1686, Amsterdam, folio. A German translation, 1670–71, Amsterdam, folio. Another, 1688–9, Nürnberg, folio.

Ogilby's Africa is based upon it, but with many additions and new plates, especially those of Tangier by Hollar. See No. 246.

240. 1669. **A Short Account** of the Progress of the Mole at Tangier from the first beginning of that work. London: folio, pp. 7.

241. 1669. **A Short** and strange **Relation** of some parts of the life of Tafiletta, the great conqueror and emperor of Barbary, by one who hath lately been in His Majesties Service in that country [Harrison ?]. London: 4to, pp. 26.

A French translation:—**Histoire veritable de Tafiletta**, le grand conquérant et empereur de Barbarie, par * * * agent de S. M. Britannique en Afrique; nouvellement traduite d'anglais en français par M. de V. V. Londres: 1669, in-12, portrait. pp. 72.

Another Edition: — Rouen: 1670, in-16 de 88 p.; also Paris, 1670. Histoire de Muly Arxid, Roy de Tafilete, de Fez, et de Maroc. Traduitte de l'Anglois de * * * Agent de sa M. Brit. à Tanger par M. de VV. 12mo (with portrait), pp. 72. See also No. 247.

A Dutch trans. appeared in 1669 (no place or publisher), 4to: 'Waerschtigh Verhael van Tafilette, den grooten conquerant en Keyser van Barbaryen, beschreven door een agent van den Koningh van Groot-Brittanien in Afryke. Uyt het Engels.'

Also a German one, Nürnberg, 1670, 4to.

242. 1669. **Copie** d'un lettre envoiée de France au sujet de la conversion admirable dv fils unique dv roy de Marocque et de Fez. (No title-page or publisher.) 4to, 8 pp. Signed, "Vidait F. R. P. S., C. L. C." Joux le copie imprimée à Lille, Chez Nicolas de Rachi, à la Bible d'or, 1669.

It refers to the conversion of Mowlai Mohammed Athasi (not the only son of Mowlai Mohammed), who was captured by a Maltese vessel on the way to Mecca, and baptized as Balthazar de la Loyala de Mendoza. He died at Toulon in 1667. The narrative is full of inaccuracies. See also Gonzalès de Santalia's 'Manductio, etc.,' pp. 40 and 50. Godard, who derives his facts from this source, says that a play of Calderon's, 'Magnus princeps de Fez, D. Balthazar de Loyala,' used to be performed in the principal cities of Spain. See also No. 282.

243. 1670. **Missive** Vande Heer Luyten'. Admiral van Gent, Geschreven Aen de Hoogh Mog. Heeren Staten Generael der Vereenighde Nederlanden: In's Landts Schip de Spiegel, zeylende, Larache anderhalf Mijl Oost Zuytoost van 't selve Schip, den 31 Augusti 1670. Houdende Advertentie van de Heerlijcke ende Geluckighe Victorye, daer mede Godt Almachtigh de Wapenen van de Staet op den seven-en-twentighsten ende acht-en-twentighsten Augusti

voorsz, tegens 6 Algierse Rovers heest ghelieven to Zegenen Hague. [No place, but printed by "Jacobus Scheltus, Ordinaris Drucker van de Ho. Mog. Heeren Staten Generael de Vereenighde Nederlanden, woonende op het Binnen-Hoat."] 4to, pp. 11.

A fight with pirates near Larache, two of the rovers being commanded by renegades. The account, which is very rare, concludes with an Extract from Jacob Stricher of Amsterdam's Almanac for 1670, in which there is an astrological forecast of such a fight.

244. 1670. **The Adventures** of Mr. T. S., an English Merchant, taken Prisoner by the Turks of Argiers, and carried into the Inland Countries of *Africa;* with a Description of the Kingdom of *Argiers*, and of all the Towns and Places thereabouts; as also a Relation of the Chief Commodities of the Countrey, and of the Actions and Manners of the People: Whereunto is annexed, an Observation of the Tide, and how to turn a ship out the Straight Mouth, the wind being westerly. London: 8vo. ("Printed by W. Goobed and is to be sold by Moses Pitt, at the white Hart in little Britain.")

The latter portion is the only part which bears directly on Morocco, though all of it is indirectly concerned with piracy and Christian slavery common to all the Barbary States. It is doubtful whether part of it is not fictitious; it has certainly been dressed up by a "literary hand," probably the "A. Roberts" who dedicates it to Sir Thomas Manley.

Dutch translation: 'De Ongelukkige Voyage van Mr. T. S. Engels Koopman, *gedaan in den Jaare* 1648, en vervolgens. Behelfende signe seldzame gevallen, hoe hy by de *Algierse Turken* genoomen, en door de binnenste Deelen van *Africa* omgevaerd is: waar in met een Het konnigrijk Algiers, benessens de daar rondom leggende Steeden en Plaatsen van aansien, open gelegt en De Voornaamste Koopman schappen dier Land-streek, mitsgaders der Inwonsderer handelingen en levens-wijse, op het naauwkewugste beschreeven worden. Door den Reysiger selfs in 't Engels beschreeven, enna sijn dood uit 't legt gebragt van sijn V rond A. Roberts. Nie aldereest uyt de voorschreeven taal overgeset. Meet een Volkoomen Registeren Konst-Printen verrijkt.' Leyden [1706: n. d. on title-page], fol., pp. 61, map and two illustrations. Printed in Pieter Van der Aa's collection of 'Zee en Land Reysen 1246 tot 1696.' Leyden: 1707, etc.

245. 1670. **A Letter** from a Gentleman of the Lord Ambassador *Howard's* Retinue to his Friend in *London*. Dated at Fez, Novemb. 1, 1669, wherein he gives a full Relation of the most remarkable passages in their voyage thither, and of the present State of the Countries under the power of Tafiletta, Emperour of *Morocco;* with a brief account of the Merchandizing Commodities of *Africa*, as also of the Manners and Customs of the People there. London: sm. 4to. ("Sold by Moses Pitt at the white-Hart in little Britain.")

246. 1670. **Ogilby, John.**—Africa: being an accurate description of the regions of Egypt, Barbary, Lybia, and the Billedulgerid, &c. London: folio, maps and plates, pp. 768. An adaptation and expansion of Dapper. See No. 239.

The section on Morocco extends from pp. 158–205. Most of the plates are printed from Dapper's coppers. But those of "Muley Arsheid," p. 164 (not in the list of illustrations given), the plan of Tangier, p. 197 (by White), and the True Relation of Capt. Kempthorn's Engagement in the Mary Rose, with Seven Algier Men of War, p. 218 (with description printed on the plate), like the first by Hollar, are not in the Dutch work.

Ogilby, a Scotchman, who, beginning life as a dancing-master, ended it as

"Their Majesties Master of the Revels in the Kingdom of Ireland," was a most industrious compiler, and it speaks well for the intelligence of the age that geographical treatises so costly as his were saleable. Few publishers would risk such ventures nowadays.

247. 1670. **[Charant, A.]**—Lettre ecritte en reponse de diverses Questions curieuses sur les parties de l'Affrique où regne aujourd'huy Mvley Arxid, Roy de Tafilete, par M * * * *, qui a demuré 25. ans dans la Mauritanie. Paris: 12mo, pp. 211 (see Nos.241, 251).

This letter contains some very curious and interesting particulars about Morocco. An edition is usually bound up with the 'Histoire de Muley Arxid,' No. 251.

248. 1670. **Fréjus, Roland.**—Relation d'un voyage fait en 1666 aux royaumes de Maroc et de Fez, etc. Paris: 12mo. New edition, Paris, 1682, 12mo. Dutch trans. 8vo, 1698. See also No. 257.

249. 1670. **Bosquets, Carlos Félix.**—Verdadera y nueva relaciòn y carta escrita de la plaza y fuerza de Melilla á un Caballero desta ciudad de Málaga, donde le da cuenta del viaje que tuvieron á dicha plaza, faginas que han hecho ella en para levantar dos fuertes, entradas y emboscadas que han hecho los Moros, crueles encuentros y batállas que han tenido, y estrago que en ellos han hecho hasta el dia 12 de Junio deste presente Año de 1670. Málaga: fol. (Duro.)

250. 1670. **Blome, Richard.**—A Geographical Description of the Four Parts of the World taken from the Notes & Workes of the famous Monsieur Sanson, Geographer to the *French* King, and other eminent travellers and Authors. To which are Added the *Commodities*, *Coyns*, *Weights*, and *Measures* of the Chief Places of Traffick in the World; Compared with those of *England* (or London) as to the Trade thereof. Also a Treatise of *Travel* and another of *Traffick*, wherein the Matter of Trade is briefly handled: The whole *illustrated with Variety of Useful and* Delightful Mapps *and* Figures. A work Beneficial and Acceptable to all Men, especially to those that intend to spend some part of their Time in other Countreys, or desire to be Informed of them here at Home. Also very necessary for *Merchants*, *Factors*, and *Mariners*. And which hitherto hath been Undertaken by none. London: folio, pp. xi. (licence, title, "testimony of Approbation," signed among others by Sir Kenelm Digby, James Howell, and Nicolas Mercator, dedication, contents, preface, &c., unnumbered). Asia: pp. 113, with Index. Africa: pp. 82, with Index. Europe: pp. 138, with Index. America: pp. 56, with Index. Travel: pp. 55, with Contents.

The portion on Morocco is pp. 7–18, with Sanson's Map of Barbary.

251. 1670. **Histoire** de Mvley Arxid, Roy de Tafilete, Fez, Maroc, & Tarudent. Avec la Relation d'un Voyage fait en 1666, vers ce Prince, pour l'etablissement du Commerce en ses Estats. Et vne lettre en response de diverses Questions curieuses faites sur la Religion, Mœurs, & Coustumes de son Païs; avec diverses particularites remarquables. Escrite par Monsieur * * * qui a demuré 25. ans dans les Royaumes de Sus & de Maroc. Paris: 12mo. In two parts, pp. 286 and 211.

This is the title-page: but from the "Extrait du Privilege du Roy," it appears that the title as registered in the 'Livre de Communaute des Marchands Libraires et Imprimeurs' was 'Histoire de Muley Arxid, Roy de Tafilete, de Fez & de Maroc, traduite de l'Anglois par * * *, Agent de sa M. Britannique: Et la Relation d'un Voyage fait en Affrique vers ce Prince, par le Sieur Roland Fréjus, de Marseille. Avec une Lettre escritte sur diverses

Questions curieuses de parties de Affrique, où regne aujourd'huy Muley Arxid, Roy de Tafilete, par M. qui a demeuré 25. ans dans la Mauretanie.' This last part is a reprint of M. Charant's letter (No. 247), usually bound up with Roland Fréjus' Narrative, No. 248. The first part is a translation of No. 241. There is a curious portrait of Muley Arxid (Er-Raschid) as a frontispiece which fifty-six years later figured in the German translation of Windus' Narrative (No. 342) as the portrait of Moulai Ismail at the age of 82. Another edition, par M. Leg * * * Paris, 12mo, 1682.

Translated into English, 1671, under the title, 'Relation of a voyage made into Mauritania in the year 1666 to Muley Arxid, King of Tafiletta, with a letter concerning the Religion, Manners and Customs, by Mons. A. Charant.' Englished, London, 18mo; also into Italian, Bologna, 1670; German, Nürnberg, 1676, and Dutch, 8vo. 1698.

252. 1671. **Mons. A * * *** [Charant, A.].—A letter in answer to divers curious questions Concerning the Religion, Manners and Customs of the Countreys of Muley Arxid, King of Tafiletta. Also their trading to Tombutum for gold and divers other remarkable particulars by Mons. A * * * *, who lived 25 years in the Kingdom of Sus and Morocco. Englished out of French. London: 12mo, pp. 71. See No. 247.

Generally bound up, as is the French original, with the English translation of Roland Fréjus' Voyage.

253. 1671. **Short Account of the Affairs of West Barbary**; 1630–1671. Part of **H. Cholmley's** Discourse of Tangier. Rawl. MS. in Bodleian Library, A. 341, fol. 49.

254. 1671. **Eliot, Rev. John.**—Mr. Sumner (No. 748) quotes from the MS. Journal of Rev. John Eliot, the illustrious apostle to the Indians, an account of the Captivity of Captain Foster and other Americans at Sallee. (Sumner, p. 68.)

255. 1671. **Addison, Lancelot.**—West Barbary; or a short narrative of the revolutions of the kingdoms of Fez and Morocco, with an account of the present Customs, Sacred, Civil and Domestick. The Theater in Oxford: 8vo, pp. 226, with "An Index of the Moorish Words." Also Pinkerton's Voy. and Trav. vol. xv. pp. 403–441.

The author, who had been Chaplain at Tangier, was subsequently one of the Chaplains in ordinary to His Majesty, and father of the celebrated Addison. There are also French and German translations of this work. The latter, 'Beschreibung von Fes und Maroko, und der Westbarbarie,' was published at Nurnberg in 1672, 12mo.

256. 1671. **Balthorpe, I.**—The Streights Voyage, or St. David's Poem; concerning an expedition to Algiers. London: 12mo.

This is a quaint account in doggerel verse of the expedition against Algiers in 1669, under the command of Sir Thomas Allen; the writer was on board the *St. David*, bearing the flag of Rear-Admiral Sir John Harman; Balthorpe had himself passed a year and a half in captivity.

"August the tenth we sail'd away
And anchored at Tangeir next day
A Place the English now possess
On the Barbarian Shoar it is
Tis fortified very strong
Or else we should not keep it long."

257. 1671. **Fréjus, Roland.**—The Relation of Voyage made into Mauritania, in Africk, by the Sieur Roland Fréjus of Marseilles by the French Kings order in the year 1666, to Muley Arxid, King of Tafiletta, &c., for the Establishment of a Commerce into all the Kingdom of Fes and all his other conquests. With a Letter, in answer to divers curious Questions concerning the Religion, Manners, and Customs of his Countreys, also their trading to Tombutum for Gold, and divers other remarkable particulars. By Mons. A. Charant, who lived 25 years in the Kingdom of Sus and Morocco. Englished out of French. London: 12mo, pp. 119. See also No. 248.

The Letter paged separately, pp. 71.

258. 1673. **Hollar, W.**—Divers Prospects in and about Tangier exactly delineated by W. Hollar, his Maⁿᵉˢ designer, Aᵒ 1669, and by him afterwards to satisfie the curious etshd in Copper, And are to be sold by John Overton at the White Horse without Newgate, London 1673.

These views, now very rare, consist of (1) Prospect of ye North side of Tangier regarding the mayne Sea from the hill as you come from Whitby or the West, towards the Towne; (2) Prospect of ye Inner part of Tangier with the Upper Castle from the South East; (3) Prospect of Yorke Castle at Tangier from ye Strand and the North West; (4) Prospect of ye Lower part of Tangier from the hill West of White-hall; (5) Part of Tangier from aboue, without the Water-gate; (6) the South-East Corner of Tangier, etc.

Several others were printed separately. There is one in Ogilby's 'Africa' (No. 246), and a number unpublished in the British Museum and in the Royal Library at Windsor.

259. 1673. **Settle, Elkanah.**—The Empress of Morocco, a Play. Acted by His Majesty's Servants. London: 4to.

This drama, produced at the Duke's Theatre in 1673, when the author was twenty-five, was a signal success, and is said to have been the first play "ever sold in England for two shillings, and the first that was ever printed with cuts." These plates are now what the play is chiefly valued for, showing as they do the arrangements of the stage, &c., at the period when it was played. Indeed so run after have they been by "Grangerisers," and so little is the text which they illustrate esteemed, that it is now extremely difficult to get a copy out of which they are not cut. Puffed up with his success, he attacked the literary magnates of the age, and in consequence was pilloried by them to all eternity. He is the "Doeg" of Dryden's 'Absalom and Achitophel.' Dryden declared him to be "an animal of most deplored understanding, a twilight of sense and some glimmering of thought;" and Pope has immortalised him in the 'Dunciad' by the lines "But lived in Settle's numbers one day more." Dryden co-operated with Crowne and Shadwell in penning sarcastic notes on the 'Empress,' and T. Duffet wrote a farce (*ut infra*) with exactly the same title, in ridicule of it. Settle died in the Charterhouse after having been for some years Poet Laureate of the City.

260. 1674. **Duffet, T.**—The Empress of Morocco. A Farce with the Epilogue, being a new Fancy after the old and most surprising way of Macbeth, performed with New and Costly Machines by H. Wright. London: 4to, pp. 24.

Except for its connection with the foregoing, this now very rare play is only distantly related to the literature of Morocco. It is a coarse travesty of the Witches in 'Macbeth.'

261. 1674. **La Martinière, Sieur de.**—L'heureux esclave, ou relation des

Aventures du Sieur de la Martinière en Barbarie et delivré: la manière de combattre sur mer; de l'Afrique et autres particularitez. Paris: 12mo, pp. 136 (with figures in the text).

262. 1675. **Anecdotes Africaines,** depuis l'origine ou la découverte des differens Royaumes qui composent L'Afrique jusqu'à nos jours. Paris: 8vo, pp. 230 (Anecdotes Egyptiennes) + pp. 60 (Anecdotes de Barbarie = Maroc) + pp. 60 (Anecdotes Algériennes) + pp. 30 (Anecdotes Tunisiennes) + pp. 16 (Anecdotes Tripolitaines) + pp. 80 (Anecdotes Abyssiniennes) + pp. 178 (Anecdotes des Côtes occidentales, méridionales, et orientales de l'Afrique).

263. 1675. **San Francisco, Fr. Matiás de.**—Relacion del viage espiritual, y prodigioso, qve hizo á Marrvecos el Venerable Padre Fr. Juan de Padro, Predicador, y primer Provincial de la Provincia de San Diego del Andaluzia, Escrita por el Padre Fray Matias de San Francisco, su humile compañero, Guardian al presente del Convento de su Orden, fundado en Marruecos, da la segunda vez a la Estampa (a instancia de los aficionados al siervo de Dio), el Padre Fray Iuan de la Encarnacion, Predicador, y Guardian del Convento de Descalços de nuestro Padre San Francisco, en la Puente de don Gonzalo de la Provincia de San Diego en Andaluzia, y Procurador de dicha Provincia en la Corte; y dedicado al mismo Serafico Padre. Cadiz ("por Bartolomè Nuñez, Impressor, y Mercader de Libros"): sm. 4to, pp. 10 (Privilegio, dedication, Preambulo, etc.) + 225 + 2 of Contents.

The "privilegio" is dated July 1643, and there seem to have been previous editions at Madrid in 1643 and 1645, from which this was reprinted. All are, however, extremely rare. The only copy we have seen belonged to the Beckford Library.

264. 1675. **Ocaña, Fr. Gines de.**—Epítome del viage qve hizo á Marrvecos el Padre Fr. Francisco de la Concepciõ, Consultor del Santo Oficio, Padre, y Definidor de la Santa Prouincia de S. Diego de Andalucía. De Orden de la Magestad Catolica de nvestro gran Monarca Felipo Quarto: con particular presente, y carta suya pera el Emperador de aquel Imperio, fauoreciendo la Mission y Convento que allí tiene esta Santa Prouincia. Tratase en ella de las cosas mas memorables que sucedieron, y de los Misionarios que llevó para asistencia de aquel Conuento. Por Fr. Gines de Ocaña, compañero que fue del venerable P. Fr. Juan de Prado, que en el sobre dicho Imperio fue açotado, acuchillado, asaetado, y quemado viuo por la confessión, y defensa de nuestra Santa Fé Católica: y en este viage lo ha sido de nuestro padre Fray Francisco de la Concepcion. Sevilla: 4to, pp. 10 (unnumbered privilegio, summa de tassa, dedication, &c.) + 48 (through being paged in leaves only, the pagination runs to pp. 24).

The "privilegio" is dated 11th Dec. 1646. There was an earlier edition in 1644.

265. 1675. **Addison, Lancelot.**—The present State of the Jews; more particularly relating to those in Barbary; wherein is contained an Exact Account of their customs, Secular and Religious; to which is annexed, a summary discourse of the Misna, Talmud, and Gemara. London: 8vo, pp. 247, with a frontispiece of a naked savage, evidently the publisher's idea of a Barbary Moor. 2nd ed., 1676; 3rd ed., 12mo, 1682.

266. 1675. **Zanoni, G.,** Director of the Botanic Garden of Bologna.—Istoria Botanica. 4to.

In this work we find, according to M. Cosson, the first mention of botanical researches in Morocco. Alexander Balaam, a merchant who had relations with

Tangier during its occupation by the Portuguese and English, sent plants and seeds to Zanoni, from the environs of that city.

267. 1676. [G. P.]—The Present State of Tangier: in a letter to His Grace the Lord Chancellor of Ireland, and one of the Lords Justices there. To which is added, **The Present State of Algiers.** London: 12mo, pp. 135. [The portion on Tangier ends on p. 70.]

This is a very curious contemporary account of every-day life in Tangier during the English occupation.

268. 1678. **Addison, Lancelot.**—The First State of Muhametanism, or an Account of the Author and Doctrine of that Imposture. London: 8vo.

The first edition of this work appeared anonymously. Next year the authorship of it was avowed in a 2nd ed., published as 'Life and Death of Muhamed.'

It has little to do with Morocco, except that the writer's only practical acquaintance with Islam was obtained during his Chaplaincy in Tangier—an office in which, according to Anthony à Wood (Athenæ Oxoniensis, ed. Bliss, vol. iv. pp. 517–19), he was superseded against his wish—and from the circumstances of its containing various local allusions.

269. 1679. **The Present Danger of Tangier,** or an Account of its being Attempted by a Great Army of the Moors by Land, and under some apprehensions of the French at Sea. In a letter from Cadiz [by G. M.], dated the 29th of July (Old Style), 1679, To a Friend in England [Will Ellis at the Three Pidgeons in Creed-lane] London: fol., pp. 4.

270. 1679. **Gallonyé.**—Histoire d'un esclave qui a été quatre années dans les prisons de Salé en Afrique; avec un Abrégé de la vie du roy Taffilette. Paris: 12mo, pp. 32.

A Dutch translation by Broekhuisen (bound up with his version of Dan, No. 299) appeared in 1684, and another in folio (as part of Van der Aa's 'Zee en Land Reysen,' Leyden, 1707) in the same language.

271. 1680. **A Discourse** touching Tanger in a Letter to a Person of Quality; to which is added, The Interest of Tanger: by another hand. London: 4to, pp. 48. Another edition, 12mo. 1680. See also Harleian Miscellany, vol. v., pp. 519–532.

272. 1680. **An exact Journal** of the Siege of Tangier: from the first sitting down of the Moors before it on March 25th, 1680, to the late Truce, May 19, following. In three letters written by three Eye-witnesses of the whole Transaction. London: folio, pp. 13.

273. 1680. **A Particular Narrative** of a great engagement between the garison of Tangier and the Moors, and of the Signal Victory which His Majesty's Forces obtained against them on the 27th of October last, published by Authority. London [In the Savoy, Thomas Newcombe]: fol., pp. 8.

274. 1680. **A Letter** from Tangier Bay, 17th May, 1680. London: fol., pp. 3. At pp. 7–9 of No. 272.

275. 1680. **A Second Journal** of the Siege of Tangier, from March 20th to May 24th, 1680. London: folio, pp. 4. At pp. 10–13 of No. 272.

276. 1680 ? **The Present Interest of Tangier.** No place or date: folio, pp. 4.

"Tangier might be made the most prosperous and hopeful city that belongs to England."

277. 1680? **A True Relation** of a Great and bloody fight between the English and the Moors before Tangiere, and of the Bravery and Heroick Exploits done by the English, with an account of the Commanders and Captains that were Ingaged, also the number slain and those taken Prisoners, with several other particulars concerning that famous Garrison. [London?] folio, pp. 4.

278. 1680? **A Faithful Relation** of the Most remarkable Transactions which have happened at Tangier, since the Moors have lately made their attacques upon the Forts and Fortifications of that Famous Garrison. Likewise the strength and good posture of Defence it remains now in. With an account of the Trenches, Lines, and Works they have already drawn in order to their besieging several of the said Forts strongly guarded by the English, and the advantageous success the English have obtained over those Infidels, in a late Fight between them; burning and demolishing their works, beating them out of their Trenches, killing them, and pursuing them even to their Camp. No name, place, or date: folio, pp. 4.

279. 1680. **A Particular Relation** of the late Successes of his Majesties forces at Tangier against the Moors. Published by authority, Tangier, Septemb. 23, 1680. London. [In the Savoy, by Thomas Newcomb]: fol., pp. 4.

280. 1680. **Letter** from the King of Morocco to Charles I. for the reducing of Sally, Argiers, &c. London: folio.

281. 1680. **Le Siège de Tanger par les Mores.** Extraordinaire du Mercure de France, No. 55, pp. 329-330. Paris: du Buvais d'Adrene, aux Galleries du Louvre devant la ruë St. Thomas, le 10 juillet 1680, 4to, pp. 12.

282. 1680. **Calderon de la Barca, Pedro.**—Comédia Famosa, El Principe Constante y Martyr de Portugal. Many editions. See No. 242.

One of the author's most remarkable dramas; alludes to Christian slavery in Morocco. Amongst the dramatis personæ are *El Rey de Fez, Alfonso Rey de Portugal, Tarudants Rey de Marruecos*, &c.

283. 1681. **Ross, John.**—Tanger Rescue, or a Relation of the late Memorable Passages at Tangier, giving a full and true account of the several skirmishes of His Majesties Forces there against the *Mores*, and particularly of that Bloody Engagement with them upon the twenty-seventh day of Octob. last; very pleasant and satisfactory. Together with a description of the said City, with the Considerable Forts thereof; as also a Description of the *Mores*, their nature and country, in verse. By John Ross, Gentleman, an eye witness. London: 4to, pp. 36.

"It is a land with Milk and Hony flows,
Where everything without manuring grows."

284. 1681. **[Addison, Lancelot.]**—The Moores Baffled; being a discourse concerning Tangier, especially when it was under the Earl of Teviot; by which you may find what methods and gov[t] is fittest to secure that place against the Moors. In a Letter from a Learned person (long Resident in that place) at the desire of a person of Quality. London: 4to, pp. 27.

In the 2nd ed. of this pamphlet the authorship is acknowledged to have been by Joseph Addison's father, who was Chaplain to the Garrison during the Earl of Teviot's Governorship (1663-1664): 'A Discourse of Tangier under the gov[t] of the Earl of Teviot, written by Dr. L. Addison, Dean of Lichfield, who was Minister to the English at Tangier, till the death of the said Earl.' London: 1685. It was republished in Edinburgh in 1738 by George Lord Rutherford (printed by T. W. Ruddimans).

285. 1681. **Préchac.** La Princesse de Fez. Paris: 2 vol. A romance.

286. 1681. **Faria de y Sovsa, Manvel.**—Africa Portvgvesa par sv avtor. . . . Lisboa: fol., pp. 207.

A good account, though in some part largely taken without acknowledgment from Leo, of the Portuguese conquests in Morocco. The "unico tomo" is entirely occupied with this. No second was ever published, though 3 vols. are devoted to Europa Portuguesa, Lisboa, 1678. The author was a prolific writer, his publications comprising more than 60 volumes. He was born in 1590, and after filling various offices, including that of Secretary to the Spanish Embassy in Rome, where he enjoyed the favour of Pope Urban VIII., died in Madrid in 1649. This work was therefore posthumous.

287. 1682? **The last Account** from Fez, in a letter from one of the Embassy to a Person of Honour in London, containing a Relation of Colonel Kirk's Reception at Mequinez by the Emperour, with several passages in Relation to the Affairs of Tangier. [London:] fol., pp. 4.

288. 1682. **Settle, Elkanah.**—The Heir of Morocco, with the Death of Gayland (as played by His Majesty's Servants). Acted at the Theatre Royal. London: 8vo, pp. 51.

289. 1682. **The Princess of Fess,** or the Amours of the Court of Morocco. A novel. London: 12mo, 2 parts, pp. 143. (Trans. of No. 285).

290. 1682. **A Letter** from Tangier concerning the death of James Rowland and other occurrences since the Ambassador's arrival there. London: folio. (Renou.)

Not in the British Museum Library.

291. 1682. **Articles et Conditions** de Paix Traitez par l'ordre exprez de tres-haut, tres-puissant, tres-excellent, & tres-invincible Prince Louis XIV. par la Grace de Dieu Empereur de France & Roy de Navarre, avec les Ambassadeurs de tres-haut, tres-excellent, tres-puissant & tres-invincible Prince Muley Ismael, Empereur de Maroc, Roy de Fez & de Sus, Fait à Saint Germain en Laye le vingt-neuvième Janvier 1682. 4to, pp. 8.

This treaty, which is signed by Colbert de Lugnelay and Colbert de Croissy, consists of 20 Articles, with a form of passport which was in future to be carried by French ships to protect them from capture. It gave France, among other privileges, that of establishing Consuls at Sallee and Tetuan. See also 'Tab. des Étab. Français en Algérie,' 1841, p. 420.

Baron de Saint-Amand was sent to Morocco to ratify this treaty, but the Sultan disavowed it entirely and dismissed M. de Saint-Amand.

The MSS. of the negotiations of this pitiable failure are cited in the 'Catalogue de la Bibliothèque de M. Langlès,' p. 431. See also Nos. 297, 304.

292. 1682? **Relação** dos successos na journada, e primeiro anno de Gouverno de Christovão de Almada na Praça de Mazagão. Manuscripto da Bibl. Pub. de Lisboa com o numero B. 3. 9.

De Almada was succeeded in 1681 by Bernardim de Sousa de Tavora Taveres. (Da Cunha, pp. 8, 38.)

He mentions that the Sultan of Morocco would not designate the Governors of Mazagan by any other name than that of "Alcaides d'Alborega" (Kaids of El Brija, the Arab name of Mazagan).

293. 1682. **"M. le G."**—Relation curieuse des états du roi de Fez et de Maroc qui règne aujourd'hui; avec une description des ports et places fortes des

Espagnoles, des Anglais, des Portugais, et du roi du Maroc, aux côtes de Barbarie, par M. le G., qui y a fait un sejour de vingt cinq ans. Paris: 12mo.

294. 1682. **Desmay, Louis.**—Relation nouvelle et particulière du voyage des RR. PP. de la Mercy aux royaumes de Fez et de Maroc, pour la redemption des captifs Chretiens, negociée en l'année 1681 avec Moule-Ismael, Roy de Fez & de Maroc, regnant audjourd'huy. Paris: 16mo, pp. 144.

With list of slaves ransomed, pp. 130–144.

295. 1682. **Moüette, Sieur.**—Relation de la Captivite du Sr. Moüette dans les Royaumes de Fez et de Maroc, où il a demeuré pendant onze ans. Où l'on void les Persecutions qui y sont arrivées aux Chrêtiens Captifs, sous les Regnes de Mouley Archy, & de Mouley Seméin son successeur regnant aujourd'huy, & les travaux ordinaires auxquels on les occupe. Avec un Traité du Commerce, & de la maniere que les Negotians s'y doivent comporter: Ensemble les termes principaux de la Lanoue, qui est la plus en usage dans le Païs. Paris: 12mo, pp. x. + 362 + 10.

Another edition: Paris, 1702.

The last chapter contains an Arabic vocabulary and a list of the provinces and towns of Morocco.

Translated into Dutch in Van der Aa's 'Zee en Land Reysen,' (1707) and into English in 'A New Collection of Voyages and Travels into several Parts of the world. None of them ever before Printed in English.' London: 4to, "Printed for J. Knapton, Andrew Bell, D. Midwinter, Will. Taylor, and J. Baker," 1711. Moüette's 'Travels in the kingdoms of Fez and Morocco during his eleven years' captivity in those parts' occupies from pp. 1–115, with contents and index, and with the Taleb-Bongeman's map. Of this Taleb, Moüette gives an interesting account. He had been Secretary to the Kaïd Sidan, one of "Mouley Archy's" (Er-Rashid) favourites. When Sidan was murdered by "the great men of the kingdom," Bongeman's goods at Old Fez were plundered, and the owner expelled by the citizens. He then retired to New Fez, and pursued the business of painting and making fretwork in plaster, which he had learnt in his youth. Moüette being set on the same kind of work, became intimate with Bongeman, and obtained from him most of the information he has embodied in his books. The fallen Secretary also drew this map, the accuracy of which was attested by "several Christians who had travelled with Muley Archy, about his train of artillery." This map was obtained from Moüette by a trick of the Sieur Gontier, brother of the French Consul at Salli. But he kept a copy during his captivity, though it is not engraved in the first edition of his 'Relation.'

The volume containing the English translation, which also contains Peter Teixeira's 'Travels from India to Italy by land,' Francis Cauche of Roan's 'Voyage to Madagascar,' Tellez's 'Travels of the Jesuits in Ethiopia,' also separately indexed and dated, was reprinted in 1718, London, 4to, and is accounted among the rarest of such works. A summary appeared also in Stephen's 'Collection of Travels, 4to, vol. ii.

"I set out from Paris," the Sieur Moüette tells us, "on the last day of July 1670, with my cousin Claude Loyer la Garde, and a friend of ours, designing for the West Indies. Being come to Dieppe, we embarked there on the 16th of September, paying 56 livres each of us for our passage, in a small vessel of 120 tons and 6 guns, called the *Royal*, and commanded by Isaac Beliare, of Dieppe. After, we embarked Madame de la Montagne, whose husband had

been commander of the ancient inhabitants of the Island of St. Christopher, and she was returning thither with the Knight [of Malta] her son, and some men and women servants. The same day thither there came aboard of us a young gentleman of that country, who had fled from his father, having had the misfortune to kill his elder brother, whom his father loved entirely." After battling with gales, they were captured by two Saleitines, and carried into slavery, on the 24th October, 1670. One of the pirates, having been chased by an English war-ship, managed to escape into Fidella; the other, on board of which was Moüette, ran ashore near Sallee, Madame de Montagne being drowned in the attempt to get ashore. This narrative of his adventures is one of the most interesting in the entire range of the pathetic stories of Christian slavery. Moüette was ransomed in 1680 by the RR. PP. de la Mercy.

296. 1682. **Moüette, Sr.**—Histoire des Conquètes de Mouley-Archy connu sous le nom de roy de Tafilet, et de Mouley Ismaël ou Semein, son frère et son successeur à present régnant, contenant une description de ces royaumes, des lois, des coustumes et des mœurs des habitants, avec une carte du pays. Paris 12mo. See also No. 864.

297. 1683. **Voyage du Baron de Saint-Amand,** Capitaine de Vaisseau, Ambassadeur du Roi très-Chrêtien, vers le Roi de Maroc. Lyon: 12mo.

A second edition, 8vo, was published in 1699, no doubt on account of the interest which the Mission of M. Pidou de St. Olon (No. 308), had created in France. See also No. 304.

298. 1684. **Vries, S. de.**—Handelingen en Geschiedenissen: Voorgevallen tusschen der Staet der Vereenighde Nederlanden en dien van der Zee-Roovers in Barbaryen: als der Rijcken en Steeden van Algiers, Tunis, Salee en Tripoli. Amsterdam: 1684, 4to, pp. 178, with index and illustrations.

Principally concerns Algiers. This is bound up in the same volume with Broekhuizen's trans. of Dan (*ut infra*) and both are issued by the same publisher in Amsterdam and at the same date.

299. 1684. **Dan, Pierre, Père.**—Historie van Barbaryen, en des zelfs zeeroovers. Behelzende een beschrijving van de Koningrijken en Steden Algiers, Tunis, Salé en Tripoli, [etc.] In 't Fransch beschreeven door den Eeerwaardigen Vader Pieter Dan [etc] . . . En in 't Nederduitsch gebracht door G. van Broekhuizen. Vervolgd met een Tweede Deel, bevattende de handelingen en geschiedenissen tusschen den Staat der Vereenigde Nederlanden en de zeeroovers in Barbaryen van 't 1590 tot op't jaar 1684 door S[imon] de Vries. Amst.: 1684, 4to. First Part [with full index], pp. 408; Second Part [with index], pp. 178. See No. 190.

The Dutch edition has many plates not in other issues, and with it is bound up (though not indicated in the general title-page) a translation of Gallonyé's 'Histoire' (No. 270): 'Aanhangsel, behelzende de rampzalige en zeer geden kwaardige Wedervaaringen van een Slaaf die te Salé vier jaaren in Slaaverny der der Ongeloovigen verflecten heept. Met een kort Verhaalvan het leeven des Konings Taffilette. In 't Fransch beschreeven door Monsr. Gallonyé . . . . in 't Nederduitsch gebracht door G. v. Broekhuizen, pp. 36 [with separate index].

300. 1684. ——— Tractaet van Vrede ende van Commercie, tusschen Syne Majesteyt, Muley Ismael, Keyser van Morocco, Koningh van Fez, Tafilet, Garbe, ende Africa, ter eenre; ende de Heeren Staten Generael der Vereenighde

Nederlanden, ende Syne Hoogheydt den Heere Prince van Orange, ter andere syde. 's Gravenhage: 4to, pp. 12 [not paged; black letter].

301. 1685. **Phelps, Thomas.**—A True Account of the Captivity of Thomas Phelps at Machaness in Barbary, and of his strange escape in company of Edmund Baxter and others, as also of the Burning Two of the greatest Pirat-Ships belonging to that Kingdom, in the River of Mamora, upon the Thirteenth day of June, 1685. London: 4to, pp. iii. + 27. Dedicated to "Samuel Pepys Esqre." who introduced the Author to the King. See also Churchill's Voyages, vol. viii., and Osborne's Voyages [generally called the Harleian Collection], vol. ii., p. 499. No. 368.

302. 1685. **Follie,** Officier d'Administration dans les Colonies.—Mémoires d'un François qui sort de l'esclavage. Amsterdam: 8vo, pp. 95. See also No. 460.

303. 1686. **James II.**—Letter to the Alcalde of Tangier about a treaty, dated 8th November, 1686. Rawl. MSS. in Bodleian Library, A. 139[b], fol. 12.

304. 1688. **De la Croix, Le Sieur Pétis.**—Relation universelle de l'Afrique, ancienne et moderne, où l'on voit ce qu'il y a de remarquable tant dans la terre ferme que dans les isles avec ce que le Roy a fait de mémorable contre les Corsaires de Barbarie, &c. Imprimé à Lyon et se vend à Paris. T. 4. 12mo. With numerous maps and illustrations. Another edition, 1698; a third, 1713. Noticed in 'Journ. des Savans,' 1689, p. 131.

This work was very complete for the time. Vol. i., pp. 364–501, contains an account of Morocco; also of the embassy sent by Moulai Ismail to France in 1682, of the return embassy under Baron de Saint-Amand [No. 297], in which the author was interpreter, and of the Moorish embassy to Holland in 1659 [No. 300].

305. 1689. **Noticias extraordinarias** del levantamiento del asedio puesto por los Moros á la plaza de Melilla. Madrid: un folleto en 4to, de 6 hoj. Bibl. Nac. (Duro.)

306. 1689. **Clemente Claudio,** Padre de la Compañía de Jesús.—Tablas Cronológicas en que se contienen los sucesos eclesiásticos seculares de España, África, Indias Orientales y Occidentales, desde su principio hasta el año 1642 de la reparacion humana. Con los catálogos de los Pontifices, Emperadores, Reyes, y Príncipes del Universo, Vireyes de las Indias, Generales de Flotas y Armadas, varones ilustres en letras y armas, observaciones curiosas de la historia antigua y moderna. Compuestas por el Padre C. C. . . . . Ilustrada y añadida desde el año 1642 hasta el presente de 1689 con las noticias que se hallan entre. Por el licenciado **Vicente Joseph Miguel.** Valencia: 4to, pp. 275.

307. 1693. **Brooks, Francis.**—Barbarian cruelty, being a true history of the distressed condition of the Christian Captives under the tyranny of Muley Ismael, Emperor of Morocco. London: 8vo, pp. 118.

It was translated into French (Utrecht, 1737, 8vo, pp. 76) and into German, and there are two Dutch Editions, one folio (Leyden, 1707, pp. 15) forming part of Van der Aa's 'Zee en Land Reysen,' and the other 8vo (Leyden, pp. 61) with plates, No. 322.

308. 1694. **St. Olon, Pidou de.**—Estat Present de l'Empire de Maroc. Paris: 12mo, pp. 223.

Another edition was published in 1695, with 8 plates, one a plan of the town of Larache, under the title: 'Relation de l'Empire de Maroc, où l'on voit

la Situation du Pays, les Moeurs, Coûtumes, Gouvernement, Religion et Politique des Habitants, par M. de S. Olon, Ambassadeur du Roy à la Cour de Maroc.' 12mo, pp. 127.

There is an English translation by Peter Motteux, 1696, 'The present State of the Empire of Morocco, with a faithful Account of the Manners, Religion, and Government of that people'; and a Dutch translation (12mo) was published at the Hague in 1698, 'Beschryving van het Keyseryk van Marokko, etc.,' with plates.

In the Catalogue of the Fonthill Abbey Library (Beckford's), p. 300, appears this entry: 'Estat present de l'Empire de Maroc, à M. Colbert de Croisy par le Sieur de St. Olon, 1693, folio, a manuscript.' Where is this MS.?

The author was sent by Louis XIV. to effect an exchange of slaves, and to conclude a treaty of peace and alliance against the Algerines. He disembarked in the Bay of Tetuan and met the Sultan at Mekenes, but he had to leave the country without effecting his object. He was even imprisoned for some time at Tetuan by the Kaid of that place.

309. 1694. **Schauplatz barbarischer Sclaverei**, oder, von Algier, Tripoli, Tunis, und Salee. Hamburg: 8vo, pp. 124.

310. 1694. **Gerrit van Spaan.**—Afrikaansche Weg-wijzer. Rotterdam: 8vo. (Renou.)

311. 1696. **Discours** veritable de la bataille donnée près de Fez, en Affrique le 30 aoust. Paris: 8vo.

The battle here celebrated was that of Tagouat, in which Moulai Sheikh defeated Moulai Nasr, nephew of Abd-el-Melek, who had been killed at the battle of El-Kasar, mainly through the help rendered by the "Euldj" or renegades.

312. 1696. **Mocquet, John.**—Travels into Africa, Asia, and America, the East and West Indies, Syria, Jerusalem, and the Holy Land; by John Mocquet, keeper of the Cabinet of Rarities in the Thuileries. Translated by Nathaniel Pullen. London: 8vo, with curious woodcuts. See No. 147.

313. 1696. **Voyage** de M. le Baron de St. Amand, Capitaine de Vaisseau, Ambassadeur du roy très chrétien, vers le roy de Maroc, par un officier de Marine. Lyon: 12mo, pp. 136. See No. 297.

314. 1696. **Spotswood** (Surgeon).—Phytologia Tingitana. (A Catalogue of plants growing within the fortifications of Tangier.) Phil. Trans. vol. **xix.**, pp. 239–249. Abr. iv., p. 85.

Spotswood was surgeon to "Kirk's Lambs" during the occupation of Tangier. His catalogue, compiled in 1673, comprises 600 species. He collected many of the plants sent to Zanoni by Balaam, and also despatched many to Dr. Morison at Oxford. His species are now rather difficult to identify, and are not included in either Ball's or Cosson's works.

315. 1697. **Herbelot, Barthélmy d'.**—Bibliothèque Orientale, ou dictionnaire universal, contenant tout ce qui fait connaître les peuples de l'Orient. Paris: folio.

This work, on which the compiler spent nearly all his life, was published by Galland (of 'The Arabian Nights'), two years after the author's death. It is based on the huge Arabic Dictionary of Hajji Khalfa, of which indeed it is for the most part an abridged translation. But it also contains a digest of many other Arabic and Turkish works and MSS. under an alphabetical arrangement, including all then known about the principal towns of Morocco.

It was reprinted at Maestricht (fol. 1776), and at Halle in 1785. But the best edition is the Hague one (4 vols., 4to, 1777–82), which contains the corrections and additions of Visdelon, Schultens, Reiske, and Galland. It is still a work of importance, and, to all but widely read Orientalists, indispensable.

316. 1698–1712. **Moreri, Louis,** Prêtre, Docteur en Théologie.—Le Grand dictionnaire historique, &c. Paris: folio, 6 vols.

This contains an article in vol. iv. on Morocco.

317. 1699. **Embassy** of Ben Aissa, Admiral of Sallee, to Louis XIV. See the *Mercure galant* of this year, from February to June, quoted by Thomassy, p. 164.

See also Nos. 318, 702.

318. 1700. **Relation** historique de l'Amour de l'emperour du Maroc pour Madame la Princesse Doüarière de Conty, escrite en forme de Lettres à un Personne de Qualitie par Mr. le Comte D . . . . . Cologne: 2 editions, one in small type, pp. 140, the other divided into 11 letters. 12mo, pp. 256.

These letters are founded on the historical fact that Moulai Ismail had the effrontery to ask in marriage Mdlle. de Blois, afterwards Princess de Conti, daughter of Louis XIV. and Mdlle. de la Vallière,—an incident which sent half the writers of Versailles into verse and epigram.

319. 1705. **Puffendorff, Samuel.**—An Introduction to the History of the Kingdoms and States of Asia, Africa and America, both ancient and modern, according to the method of . . . . London: 8vo, pp. xx. 621 + Index.

Chapters ii. (partly) and iii. (pp. 466–490) of Part II. are on the Sheriffs of Fez and Morocco, chiefly compiled from Ro. C. No. 125.

320. 1705. **Harris, John.**—Navigantium atque Itinerantium Bibliotheca, or a complete collection of voyages and travels, consisting of above four hundred of the most authentic writers; beginning with Hackluit, Purchass, &c., in English; Ramusio, Alamandini, Carreri, &c., in Italian; Thevenot, Renaudot, Labat, &c., in French; De Bry and Grynæi Novus Orbis Maffæus, in Latin; Herrera, Oviedo, Coreal, &c., in Spanish; the Voyages under the direction of the East India Company in Holland, in Dutch; and continued with others of note, &c., &c. London: 2 vol. folio, pp. 862, 928, and [App.] 56.

This contains: A particular account of the kingdom of Morocco, taken out of John Leo. Additions collected from Marmol. John Leo's description of the kingdom of Fez. Additions out of Marmol, vol. i., pp. 316–338. The rise and progress of the Xeriffian family in Barbary, with some remarks upon the policy and trade of that kingdom. Collected from the writings of Ro. C., vol. i., pp. 363–367. In the 1764 edition [by John Campbell] this paper is omitted.

321. 1707–1747. **Churchill's Collection of Voyages and Travels.** 8 vols. folio.

Vol. viii. contains: **Dunton, John,** 'True journal of the Sallee Fleet,' with the Proceedings of the Voyage.

Phelps, Thomas, 'True account of his Captivity at Machaness,' in Barbary in 1684–5.

322. 1707. **Zee en Land Reysen,** door **P. van der** Aa, mestgarden an dere Gewesten geddan 1246 tot 1696. 28 vols. folio. Leyden. See No. 307.

323. 1707. **Alexandro de la Madre de Dios.**—Chronica de los Descalzos de la S. Trinidad, redemcion de cautivos. 4to, Alcala de Henares, 1707. Madrid.

324. 1708. **San Juan, Fr. Francisco de,** Predicador Apostólico, Calificador de el Santo oficio y Guardian de el Real Convento de Mequinez.—Mission Historial de Marruecos, en que se trata de los Martirios, persecuciones y trabajos, que han padecido los Missionarios, y frutos que han cogido las Missiones, que desde sus principios tuvo la Orden Seraphica en el Imperio de Marruecos, y continùa la provincia de San Diego de Franciscos Descalços de Andalucia en el mismo Imperio. Sevilla: folio, pp. 829.

325. 1710. **Lima, Joseph Guterres de.**—Relacão dos Successos e movimentos da Praça de Mazagão. MS. (Da Cunha, p. 114.)

326. 1710. **Diaz, José.**—Relación de Marruecos por D. José Diaz, embajador. Traducida del español en Inglés. London: 4to. (Duro.)

327. 1712. **Marmol, T.**—Relation de trois voyages faits dans les états du roy de Maroc pour la redemption des captifs en 1704–1708, 1712.

Written by the priests of the order of La Merci. This is unknown at the Bib. Nat. Paris, and British Museum.

328. 1713. **Ockley, Simon, M.A.**—An account of South-West Barbary; containing what is most remarkable in the Territories of the king of Fez and Morocco. Written by a Person who had been a Slave there a considerable time, and published from his Authentick Manuscript. To which are added Two Letters; one from the present King of Morocco to Colonel Kirk; the other to Sir Cloudesly Shovell, with Sir Cloudesly's answer. London: 12mo, pp. xxxi. 152, and map.

A French translation published at Paris, 1726, 12mo: 'Relation des états de Fez et de Maroc, par un Anglois qui y a été longtems esclave; publié par Simon Ockley.' The MS., which accidentally fell into the hands of Dr. Ockley, Professor of Arabic in Cambridge and author of the 'History of the Saracens,' was only a fragment. The author of it is not known.

329. 1713. **Lasor a Varea, Al.**—Universus Terrarum Orbis, etc. (Europa, Asia, America et Africa). Patavii: 2 vols., folio.

330. 1714. **Busnot, Père Dominique,** of the Order of the Trinity.—Histoire du règne de Mouley Ismael, Roy de Maroc, Fez, Tafilet, Sous, &c. De la Revolte & fin tragique de plusieurs de ses Enfans & de ses Femmes. Des affreux supplices de plusieurs de ses Officiers & Sujets. De son Génie, de sa Politique & de la Manière dont il gouverne son Empire. De la cruelle persecution que souffrent les Esclaves Chrétiens dans ses Etats, avec le recit de trois Voyages à Miquenez & Ceuta pour leur Redemption & plusieurs Entretiens sur la Tradition de l'Eglise pour leur soulagement. Rouen: 12mo, pp. 254 + 16 + 278 (containing "La Tradition de l'Eglise," in two parts).

An English edition appeared in 1715, London, 8vo, pp. 250, with Map of "The Dominions of the King of Fez by Talabe-Bongeman, Doctor of the Alcoran" (taken from Moüette), entitled 'The History of the Reign of Muley Ismael, the Present King of Fez, Tafilet, Sous, &c. Of the Revolt and Tragical End of several of his Sons and of his Wives. Of the horrid Execution of many of his Officers and Subjects. Of his Genius, Policy, and Arbitrary Government. Of the cruel Persecutions of the Christian Slaves in his Dominions. With an Account of the three Voyages to Miquenez and Ceuta, in order to Ransom them. By F. Dominick Busnot, one of the Commissaries for the Redemption of the Captives in the Dominion of Morocco. Translated from the Original French, now first Printed at Roan, this present year 1714.' "La Tradition de l'Eglise" is not translated in this edition.

This "tradition" is however reprinted with some slight alterations and separate pagination (1–30 + 5 Privilege du Roi) in PP. François Comelin, Philemon de la Motte, and Joseph Bernard's 'Voyage pour la redemption des Captifs aux royaumes d'Alger et de Tunis, fait en 1720.' Paris: 8vo, 1721 (pp. 169 + pp. lx.—List of Slaves ransomed), Nos. 217, 218 of the 'Bibliography of Algeria.'

331. 1714. **Atlas Geographicus**, or Compleat System of Geography (ancient and modern) for Africa; containing what is of most use in Bleau, Varenius, Cellarius, Claverius, Brandrand, Sanson, &c. London: 4to.

The fourth vol. (pp. 808) is illustrated with 17 maps and cuts. The part referring to Barbary is from pp. 143 to 308. History of Fez and Morocco, pp. 218–221. Morocco in general, pp. 272–284.

332. 1714. **Aldrete, Bernardo.**—Varias antiguedades de España, Africa, y otras provincias. Amberes: 4to.

Another edition, Bruselas, 4to, 1724.

333. 1715. **Jones, Zachariah.**—Dissertatio de lingua Shilhensa, at the end of Chamberlayne's 'Oratio Dominica Indexensis linguas Versa.' Amsterdam: 4to.

334. 1718. **Echard, Laurence.**—The History of England from the restoration of King Charles II. to the conclusion of the Reign of King James II. and establishment of King William and Queen Mary. London: folio, 3 vols.

At vol. iii., p. 591, is an account of the Debate in Parliament on the King's Speech in relation to Tangier (Lord Bellasis then being a prisoner in the Tower for the Popish plot). See No. 390.

335. 1719. **Millets, Allain Manesson.**—Beschreibung des ganzen Welt-Kreises dammen. Vol. xiv., North Africa, with maps and views.

336. 1720. **Ceuta.**—Relación de la tercera victoria que el exercito de su Magestad logró el dia 21 de Diciembre de 1720 en los campos de Ceuta, donde los Moros, en número de sesenta mil hombres, volvieron á atacarle, y fueron derrotados, con pérdida de siete á ocho mil hombres. Madrid: 4to, pp. 6. (Duro.)

337. ——— Libertada, ó historia del sitio de Ceuta bajo el mando del Marqués de Leganés. MS. en la Bib. Nac. (Duro.)

338. 1720. **Vega, Francisco de.**—Chronica de la Provincia de Castilla .... de la SS. Trinidad. (Goddard.)

Liv. 3, ch. 9, contains a list of 150 captives freed at Fez.

339. 1721. **Relazione** della Segnalata Vittoria riportata dall' armi di S. M. Cattolica nel proprio Campo, nel quale vennero a dar Battaglia gli Mori con tutto il loro Esercito composto di 36 Milla Uomini, sotto li 9 Decembre 1720. Barcellona, Genova, Bologna: 4to, pp. 4.

340. 1721. **Treaty between Great Britain and Morocco**, signed at Fez, 23rd January, 1721, by Ahmed Basha, and the Hon. Charles Stewart, H.M. Ambassador. This was renewed by Art. XL. of the Treaty of 1791. (Herts. Treat. vol. i., p. 89.)

Provides for freedom of trade, and mutual permission to send on board vessels to examine passports.

341. 1724. **Relation** de ce qui s'est passé dans les trois voyages que les religieux de l'Ordre de Nostre Dame de la Mercy ont faits dans les états du roy de Maroc pour la redemption des Captifs en 1704, 1708, et 1712. Par un des Pères deputez pour la redemption de la Congrégation de Paris du même Ordre. Dedié aux evoques de Bretagne. Paris: 16mo, pp. 438.

More valuable than other works of a similar nature, and contains much general information regarding the country.

343. 1725. **Windus, John.**—A Journey to Mequinez, the residence of the present Emperor of Fez and Morocco, on the occasion of Commodore Stewart's Embassy thither for the redemption of the British Captives in the year 1721. London: 8vo, pp. xxx. 251, x. (Index), with 5 plates. Dublin Ed. 1726. See also Pinkerton's Voyages, vol. xv., pp. 442–496; Drake's Voyages, pp. 490–496.

A German translation published at Hanover, 1726, 4to, pp. 131 + index and errata, with the same plates (plus an imaginary portrait of Moulai Ismail—the same indeed which appeared in 1670 as that of Moulai Er-Raschid, No. 251): 'Reisen nach Mequinez, der Residens des heutigen Kaysers von Fez und Marocco, Welche der Herr Commandeur, Carl Stuart, als Gross-Britannischer Gesandter, Anno 1721, zu Erledigung der dortigen Gefangenen abgeleget hat, und in diesen 1725 Jahre zu London durch John Windus herausgegeben. Auch mit saubern Kupfern erlautert worden est, Aus dem Englischen uberseizet Durch F. G. Weber.

The Emperor Moulai Ismail was 87 years of age, and had reigned 53 years. On the arrival of the Embassy at Mekenes the total number of Christian captives there was 1100, of whom 300 were English; these latter were liberated. The name of Windus is not given on the title-page as the author—only in the dedication.

343. 1726. [**Chetwood, Robert.**] **Boyle, Captain Robert.**—The Voyages and Adventures of Captain **Robert Boyle**, in several parts of the world, intermix'd with the Story of **Mrs. Villars**, an **English** Lady, with whom he made his surprising Escape from **Barbary**. Likewise Including The History of an **Italian** Captive, and the Life of Don Pedro Aquilo, &c. Full of various and amazing Turns of Fortune. London: [Plate] 8vo, pp. 295.

This is a fictitious narrative. Various English editions were published. There was, for instance, a sixth in 1762. The last (pp. 374) was issued in 1828. The first issue is so rare that it is priced at £3 10s. A French edition was published at Amsterdam, 2 vols., 12mo, 1730.

344. 1726. Les pères **Jean de la Faye, Denis Mackar, Augustin d'Arcisas, Henry Le Roy**, députez de l'Ordre de la Sainte-Trinité dits Maturins.—Relation en forme de Journal du voiage pour la redemption des Captifs au roiaumes de Maroc et d'Alger. Paris: 16mo, pp. x.+364+xii. (With portrait of Marie Leczinska, Queen of France, and a folding plate of Mowlai Ismail giving audience to the priests sent to ransom French captives).

345. 1727 (*circa*). **Mohammed Es-seghir** bin el-**Haj Abdulla** el-**Ufrani.** See No. 1921.

This author lived under the reign of Mowlai Ismail (1672–1727), and perhaps later.

346. 1728. **Labat, le Père Jean Baptiste.**—Nouvelle relation de l'Afrique occidentale, contenant une description exacte du Senegal et des païs situés entre le cap Blanc et la rivière de Serrelione, jusqu'à plus de 300 lieuës en avant dans les terres. L'histoire naturelle de ces païs, les differentes nations qui y sont répanduës, leurs religions et leurs mœurs, avec l'état ancien et présent des compagnies qui y font le commerce. Paris; 5 vols., 12mo, with maps, plans, and figures. This well-known classic is practically an account of Brüés' various journeys in the Senegal and Gambia country. But in chapter xx. there are references to the Sultan of Morocco, &c.

347. 1728. **Kennet, White,** Bishop of Peterborough.—A Register and Chronicle, Ecclesiastical and Civil, containing Matters of fact Delivered in the Words of the most Authentick Books, Papers and Records; digested in Exact Order of Time, with proper Notes and References, &c. London: folio, pp. 938.

At p. 559 is the 'Journal of the Earl of Sandwich in the Streights,' 1661, MS.

P. 781. "When we had sold Dunkirk, then Tangier was cried up as a place of much greater importance."

P. 329. Tangier declared a free port.

348. 1728. **Innocencia** insultada, ou noticia da barbara atrocidade com que os Negros Mahometanos sem outro motivo mais que o odio que tem nos professores da Fé de Christo insultaraõ o Convento da Conceyçaõ que os Missionarios de Saõ Francisco tem na Cidade de Mequinez, colhida de varias chegadas da quelle paiz. Lisboa.

349. 1729. **Braithwaite, John.**—The History of the Revolutions in the Empire of Morocco, upon the death of the late Emperor Muley Ishmael; being a most exact Journal of what happen'd in those parts in the last and part of the present year. With Observations Natural, Moral and Political relating to that country and People. With a map of the country engraven by Mr. Senex. London: 8vo, pp. 381.

This contains a valuable journal of the mission of John Russel, Esq., to Morocco for the liberation of captives. The author served in the reign of Queen Anne, both on sea and land, as ensign in the Royal Guards, lieutenant in the Welsh Fusiliers, and in France, Lombardy and Venice as secretary to Christopher Cole, who was English Resident in the last-named State. He commanded in the expedition to Santa Lucca and St. Vincent; was the first volunteer that entered Gibraltar after its capture, and died in Guinea in the service of the Royal African Company.

A French translation was published in 1731: 'Histoire des Révolutions de l'Empire de Maroc depuis la mort du dernier Empereur Muley Ismael, qui contient une relation exacte de ce qui s'est passé dans cette contrée pendant l'année 1727 et une partie de 1728. Avec observations naturelles, morales et politiques sur le pays et les habitans. Traduit du Journal Anglois, écrit par le Capitaine Braithwaite, qui a accompagné Mr. Jean Russel, Ecuyer, Consul Général de Sa Majesté Britannique en Barbarie; et qui a été témoin oculaire des plus remarquables événemens mentionnez dans cet ouvrage. Et enrichie d'une Carte de cette partie de l'Afrique.' Amsterdam: 12mo, pp. 470.

A German translation appeared in 1730: 'Allerneueste Maroccanische Staats-Veränderungen,' with a map. Hamburg: 4to.

350. 1729. **Thou, J. A. de.**—History of his own time. Translated from the Geneva edition of 1620, by Bernard Wilson, A.M., Vicar of Newark-upon-Trent, and Prebendary of Lincoln. London: 2 vol. folio, pp. 699 and 568.

Books VII. and XX. give an account of the affairs of Africa—Fez, Morocco, Tremezen and Tunis, and descent of the Turks on Africa, at Tripoli, in the 53rd year of that century [sixteenth]. Buaçon (Bu Hassan), brother of the King of Fez, having made a descent with Portuguese help on Alhazemas, his ships were attacked by "Sala Rous, Governor of Algiers, in the name of Soliman, Emperor of the Turks." Afterwards Buaçon goes to Algiers, and Sala Rous becomes his ally against Fez.

351. 1729. **Additional Articles** between Great Britain and Morocco, signed

at Fez, 10th July, 1729, by John Russel. Renewed by Article XL. of the Treaty of 1791. (Herts. Treat. i., p. 93.)

Moors or Jews permitted to trade with, but not to reside in Gibraltar and Minorca. British subjects on board prizes to be given up.

352. 1730. **Several Voyages to Barbary,** containing an historical and geographical account of the country, with the hardships, sufferings, and manner of redeeming Christian slaves, together with a curious description of Mequinez, Oran and Alcazar, with a Journal of the Siege and Surrender of Oran, to which are added the maps of Barbary and the Sea-coasts; the prospects of Mequinez and Alcazar; an exact plan of Oran, and a View of the Ancient Ruins near Mequinez [Volubilis], all design'd by Captain Henry Boyde, the whole illustrated with Notes Historical and Critical. London: 8vo, pp. 146 and 158.

A second edition, with corrections, appeared in 1736.

This book, often catalogued as by Captain **Henry Boyde,** is a plagiarism from the works of the Trinitarian Fathers (No. 344). The first part is an avowed translation from this narrative, with a number of particularly offensive notes by the translator (J. Morgan), and a list of British captives ransomed by George I. and George II. supplied by Captain Boyde—or Boyd—who was master of the *Neptune,* 80 tons and ten men, bound from St. Lucar with fruit to London, when he was taken by "Sallee rovers." His share in the volume was simply to supply the engravings in the volume. In reality Boyd, who was among the 296 slaves ransomed by Commodore Stewart in 1721, was dead before the book was published. The second part is a compilation from various sources on the history and capture of Oran. The maps are of little value, but the other "prospects" are of historical interest.

353. 1731–1740. **Wadding, Luca.**—Annales Minorum seu trium ordinum A. S. Francisco institutorum auctore Luca Waddingo, Hiberno. Romae: 20 vols.

354. 1732. **Meneses, D. Fernando de,** Conde da Ericeira, Capitaõ General de Tangere.—Historia de Tangere, que comprehende as noticias desde a sua primeira conquista a sua ruina. Lisboa Occidental: folio, pp. 304.

Published after the death of the author, who was the last Portuguese Governor of Tangier, by Lorez Ferreira. It is a work of the highest historical value.

355. 1732. **Anderson, William.**—Royal Genealogies from Adam to these times. Genealogical Tables of Emperors, Kings and Princes, and the Earliest Great Families of Asia, Europe, Africa, America, and the British Isles. London: roy. folio. This work is professedly based on the 'Genealogische Tabellen' of Johann Hübner.

356. 1733. **Monsieur * * *.**—Histoire de l'Empire des Cherifs en Afrique, sa description geographique et historique; la relation de la prise d'Oran, par Philippe V. Roy d'Espagne, avec l'abrégé de la vie de Monsieur de Santa Cruz cy-devant Ambassadeur en France, et Gouverneur d'Oran, depuis la prise de cette ville. Ornée d'un plan très exact de la Ville d'Oran, et d'une Carte de l'Empire des Cherifs. Paris: 18mo, pp. 346+162.

Attributed to the **Abbé Boulet.**

357. 1734. **Treaty** between Great Britain and Morocco, signed by John Leonard Sollicoffre, on the 15th December. Provides that English subjects taken on board enemies' ships are to be given up to the Consul. Renewed by Article XL. of the Treaty of 1791. (Herts. Treat. vol. i., p. 95.)

Mutual protection to subjects of each Power on prizes.

358. 1734. **Journaal,** van het oost-indische Schip Blydorp, uitgevaren na Batavia. In den Jaare 1733, den 6. July, en tusschen den 11. en 12. Augustus, aan de Moorze Kust Verongelakt. [Vignette] Amsterdam ("Gedrukt by de Wed J. van Egmont"): 4to, pp. 8. Text Black letter, Titlepage Roman.

A narrative of a wreck on the Morocco coast.

The only copy known to the compilers is that in the collection of Dr. R. Brown.

359. 1735. **Reglamentos** para la provisión de los presidios de Africa. Madrid.

360. 1735. **Lambrechts, M.**—Journael gehouden in 's lands Schip van oorlog 't Zeepaard, Kapt. M. Lambrechts, om te Kruyssen op de Saleesche en andere rovers. Handschrift van 226 pag. fol. Dagboek geschreven door den Kommandant expeditie.

MS. in the University Library of Leyden. (Veth and Kan.)

361. 1738. **Leo Africanus.**—Extracts from the Nubian's Geography [Edrisi's], Leo the African, and other Authors antient and modern, concerning the Niger, Nile or Gambia, and observations thereon. These form an Appendix to:—

Travels into the Inland Parts of Africa, etc., by Francis Moore, Factor for several years to the Royal African Company of England. London: 8vo, pp. 305 + Appendix pp. 86 + 4 + 23. Also Drake's Voyages, pp. 519–532. The extracts from 'John Leo the African's Geographical History of Africa' are original translations from the Italian, and occupy pp. 20–79. There are a few elucidatory notes.

This work was published by Edward Cave, the year after Dr. Johnson became one of his "literary hands." It is prefaced by a very learned introduction, which bears evidences of what may be called Johnson's earlier and better style, and may possibly with the translations be by him. It is remarkable in one respect that the writer for the first time suggests that the Lotos of Homer, which has been the theme of so many identifications, was simply the date, and that "the divine nectarious juice" which caused the companions of Ulysses to rest in forgetfulness was the familiar palm wine.

362. 1738. **Relation** de la captivite et du rachat de treize esclaves marseillais . . . dédiée à MM. les Directeurs de la Rédemption générale des pauvres esclaves de Marseille et son territoire, par un des treize esclaves. Marseille: 4to.

363. 1740. **Memoirs of the Duke of Ripherda:** First Embassador from the States General to his Most Catholick Majesty, Then Duke and Grandee of Spain; Afterwards Bashaw and Prime Minister to Muly Abdalla, Emperor of Fez and Morocco, &c. Containing A Succinct Account of the most Remarkable Events which happen'd between 1715 and 1736. Interspers'd throughout with Several Curious Particulars relating to the Cardinals del Guidice and Alberoni, the Princess of Ursins, Prince Cellamere, the Marquis Beretti Landi, M. de Santa Cruz, and other Persons of Distinction in the Spanish Court. As also a Distinct and Impartial Detail of the Differences between the Courts of London and Madrid; with many Authentick Memorials and other valuable Papers. And an Alphabetical Index. London: 8vo, pp. xv. 344 + Index pp. 8.

364. 1740. **Saunier de Beaumont,** L'Abbé, under the pseudonym of **De Crouzenac,** Gentilhomme Gascon.—Histoire de la dernière revolution arrivée dans l'empire ottoman le 28 Sep. 1730, avec quelques observations sur l'état de la ville et empire du Maroc. Paris: 12mo. (Guy.)

365. 1742. [**Mairault, Adrian Maurice de.**]—Relation de ce qui s'est passé

dans le Royaume de Maroc depuis l'année 1727 jusqu'en 1737. Paris: 12mo, pp. 294.

An account of the civil war following Mowlai Ismail's death.

366. 1742. **Pellow, Thomas.**—The History of the Long Captivity and Adventures of . . . in South Barbary, Giving an account of his being taken by Sallee Rovers, and carry'd a Slave to Mequinez at Eleven Years of age; his various Adventures in that Country for the Space of Twenty-three Years; Escape and Return Home. In which is introduced a particular Account of the Manners and Customs of the Moors; the Astonishing Tyrranny and Cruelty of their Emperors, and a Relation of all those Great Revolutions and Bloody Wars which happen'd in the Kingdoms of Fez and Morocco between the Years 1720 and 1736. Together with a description of the Cities, Towns, and Public Buildings in those Kingdoms; Miseries of the Christian Slaves; and many other Curious Particulars, etc. London: 8vo, pp. 388. See also No. 1945.

367. 1744? **Dekker, Jan.**—Beschryvinge Van de Voornaam, te en merkwaardigste voorvallen, welke Jan Dekker in zyn 28. Jaarige Slaverny in Barbaryen syn overgekemen. Hoorn: 12mo.

This extremely rare Dutch booklet of 69 pp. gives the author's experience during his 28 years' captivity in Morocco. He was "taken" in 1715 and carried into "La Rassi" (Laraiche = El Araish), from whence he was, as usual with Christian captives, marched into the interior, visiting in the course of his long slavery many parts of the empire, including Tafilet.

368. 1745. **The Harleian Collection.**—Voyages and Travels not before collected in English (or which have been abridged in other collections). Compiled from the Library of Edward Harley, Earl of Oxford, with Maps and Plates [sometimes called "Osborne's Collection"]. London: 2 vols., folio.

In vol. ii. there are the following relating to Morocco:—John Dunton, True Journal of the Sallee Fleet, with the Proceedings of the Voyage 1636–37 pp. 491. Thomas Phelps, Account of the Captivity in Barbary of, 1684–85, pp. 499.

369. 1746. **Presidios de África.**—Reglamentos para éstos. Madrid: 8vo. (Duro.)

370. 1746–1789. **Prevost, l'Abbé** [and others].—Histoire générale des voyages, ou nouvelle collection de toutes les relations de voyages par mer et par terre qui ont été publiées jusqu'à présent dans les différentes langues de toutes les nations connues. Paris: 20 vols., 4to. Dutch edition, 21 vols., Amsterdam: 4to, 1767.

371. 1745–47. **Astley, Thomas.**—New General Collection of Voyages and Travels, &c. London: 4 vols., 4to.

In vol. i. is a reprint of Thomas' Second Voyage to Barbary in 1552, by Captain T. Windham.

372. 1748. **The Life and Surprizing Adventures of James Wyatt,** containing his entering himself Trumpeter on board the *Revenge* Privateer, Captain James Wimble, May 29th, 1741, etc., etc. London: 12mo, portrait and 3 plates, pp. vi. 181. A sixth edition, 1755.

This narrative of an Exeter man who was "taken" by the Moors North of Senegal is evidently truthful, or at least based on a substratum of fact. An account of Santa Cruz (Agadir) is given on pp. 21–27.

373. 1748. **The Case** of poor British Slaves in Morocco. 'Gentleman's Magazine,' vol. xviii. pp. 413, 482, 531.

374. 1749. [? **Seran de la Tour.**]—Histoire de Mouley Mahamet, fils de Mouley Ismael, Roy de Maroc. Genève: 12mo [no author or publisher's name], pp. xxiv. 321.

375. 1750? **Kort** dog opregt verhaal van alle de wreedhens in hunne slavernyo onder de Mooren geleeden door de equipage van Het Huys in t' Bos op de Moorsze Kust. Amsterdam (Wed. J. van Egmont): 4to, with plates and figures. (Posthumus' Library.)

An account of the slavery of shipwrecked seamen in Morocco.

376. 1750. [**Morgan, J.**]—A compleat history of the Piratical States of Barbary, viz. Algiers, Tunis, Tripoli, and Morocco. Containing the Origin, Revolutions, and present State of those kingdoms, their Forces, Revenues, Policy, and Commerce. Illustrated with a plan of Algiers and a map of Barbary, by a Gentleman who resided there many years in a public character. London: 8vo, pp. 368.

This work is of little value; so far as Algiers is concerned, it is largely based on Laugier de Tassy's 'Histoire du Royaume d'Alger,' 1725, which was again to some extent copied from Marmol. But for the other States he draws upon various writers, having himself no personal acquaintance with Tunis, Tripoli, or Morocco. Morgan was an indefatigable plagiarist; his account of Morocco is taken without acknowledgment from Windus, Ockley, Braithwaite, &c.

An Italian version was published in London in 1754, entitled 'Istoria degli Stati di Algeri, Tunisi, Tripoli e Marocco,' 12mo, pp. 376; and a French one in 1757, translated by Boyer de Prebandier: 'Histoire des États Barbaresques qui exercent la Piraterie. Contenant l'origine, les révolutions et l'état présent des Royaumes d'Alger, de Tunis, de Tripoli et de Maroc, avec leurs forces, leurs revenus, leur politique et leur commerce. Par un auteur qui y a résidé plusieurs années, avec caractère public, traduit de l'anglais.' Paris: 2 vols. 12mo, pp. 338 + 287.

377. 1750. **Treaty** between Great Britain and Morocco, signed at Fez, 15th January; negotiated by William Petticrew, H.B.M. Consul-General. This was renewed by Article XL. of the Treaty of 1791. (Herts. Treat. vol. i. p. 96.)

378. 1750. **Meinguy.**—Histoire des revolutions de l'empire des Arabes. Paris: 4 vol. 12mo.

379. 1751. **Troughton, Thomas.**—Barbarian Cruelty; or, an accurate and Impartial Narrative of the Unparallel'd Sufferings and almost incredible Hardships of the *British* Captives belonging to the Inspector, Privateer, *Capt.* Richard Veale *Commander*, during their Slavery under the arbitrary and despotic Government of *Muley Abdallah*, Emperor of *Fez* and *Morocco*, from *January* 1745–6 to their happy Ransom and Deliverance from their painful captivities compleated in December 1750, by the Bounty and Benevolence of his present Majesty King George. London: 8vo, pp. 216, with quaint illustrations.

A second edition was published in the same year, but with the alteration in the title of "by his Excellency William Latton, Esq., his Majesty's Plenipotentiary and Consul General to the Emperor of Fez and Morocco."

To which is added a supplement of pp. 56, "Containing an additional account of several very surprising and unaccountable Transactions which occurred to the four young men, viz. *Edward Fitzgerald*, *George Beale*, *Emanuel Rochester*, and *Thomas Stanton*, part of the above-mentioned Captives, who were stopped by the Emperor in order to be made a present to

his Majesty George the II., without the payment of Head Money, from the Time they were separated from their Companions for the Purpose aforesaid to the Time of their happy Releasement from Slavery on the 11th April, 1751."

Both editions have plates of "Muley Abdellah, King of Mequinez and Fez, Emperor of Morocco and Grand Sheriff of Mahomet," the wreck of the *Inspector* in Tangier Bay, the captives being driven into the Interior, Mowlai Abdallah's massacre of 335 of his own subjects, Mowlai Abdallah's camp near Fez, Slaves at work at Busioram. Most of these plates were reproduced in Pellow's 'Adventures' (ed. 1890). No. 1945. See also Drake's Voyages, pp. 497–310.

Twenty of the crew turned renegades, and one of them, Thomas Mears or Myers, was living in Merakish, high in office as "Alkaïd Boazzer," when Colonel Keatinge visited that city fifty years later. He had, however, fared rather badly in other respects. See No. 512.

380. 1751. **Additional Articles** between Great Britain and Morocco, signed at Fez, 1st Feb.; negotiated by W. Petticrew. Renewed by Art. XL. of the Treaty of 1791. (Herts. Treat. vol. i. p. 97.)

381. 1753. **Journaal** wegens de rampoedige reys-tocht, van de Ed. Geftrengen Heer Capiteyn Hendrik Cornelis Steenis, en Dienst van het Edel Moogende Collegie ter Admiraliteit, Ressileerende te Amsteldam, met het oorlogschip genaamt het huys in 't Bosch gestrand op de Moorsche kust in Afrika tusschen Ceuta en Kaap Porkus, op Maandag middag den 20 December 1751. Als meede een Korte beschrijvinge van de Steden Tetuan en Fez, de Handeling met den Keizer van Marokko, de Vreedemaaking met Haar Hoog Moogende, en de Elendie en Behandelinge van het Scheeps Volk; Nevens een Lyst der Genoomene Scheepen door de Saaleesche en Tetuansche Roovers, zeder't Jaar 1732, en de Naamen der geloste Hollandsche Gevengenen. Door Kunstige Plaaten Verbeeld (2 plates (imaginary) with curious title-page). pp. ix. (preface signed "B. M.") and pp. 35. Amsterdam: 4to.

There is no date on the title-page, but from internal evidence it seems to have been issued in 1753; 2nd edition, 1755. This narrative reached a 3rd edition.

382. 1754. **Relação** da Grande Victoria que alcançou contra os Mouros o Presidio de Mazagão. Lisboa. (Da Cunha, p. 138.)

383. 1754? **Bessa, Manuel de.**—Relação da Batalha que o Presidio de Marzagan 'teve com os Mouros, offerecida a . . . . (Da Cunha, p. 137.)

384. 1754. **Ravn, Wilhelm Frederik.**—Kort Underretning om det Maroccanske Slaverie i Aarene 1751, 1752, og 1753 dagvis forfattet paa vers af den af expeditionen antagne kasserer . . . . daværende Slave. Kjöbenhavn: 4to, pp. 98.

In 1751 the Danish Government sent to Mowlai Abdallah, or rather to his son Mohammed, then the virtual ruler, an embassy on board of two frigates. This mission was under the direction of Col. Longueville, and numbered among its members Lieut. (afterwards Admiral) Kaas, and Ravn, as Treasurer of the party, who wrote in quaint Danish doggerel an account of its adventures. Owing to mismanagement, ignorance of the country, and, above all, to the misrepresentations of a Moorish Jew, whom they trusted too implicitly, the entire embassy were put under arrest in Merakish, on the ground that the Danes had without permission established a fortified post at Santa Cruz. Höst has preserved a plan of the house in which they lived,—a building, according to Ravn, of clay, one story high and with three rooms:

"Fik en Stage höi, plat Tag og ikke meer,
End 3 smaa Kamere og Murene af Leer."

In 1753 Captain Lützow obtained a concession for a Danish Company, which, by paying 50,000 piastres per annum, obtained the exclusive commerce of Safi and Salli. But it was unfortunate, and, finally finding itself unable to compete with the Mogador and Larache merchants, became bankrupt.

385. 1756. **An Account of an Earthquake** that happened in Barbary [viz. Tetuan, Tangier, Arzila, Sallee, Fez, Mequinez, Saffee, Marakish, Saigon hills, and Tarso] on the 1st November, 1755. Inclosed in a letter from General Fowke, Governor of Gibraltar, communicated by Viscount Royston. (Phil. Trans. 1756, vol. xlix., page 428.)

386. 1756. **Noticia** do grande assalto e batalha que os Mouros derão á Praça de Mazagam. Lisboa. (Da Cunha, p. 139.)

387. 1756. **Baumgarten, J.**—Geschichte d. Numidier, Mauritanier, Lybier, Ethioper, Araber, Reich v. Trapezont, alte Gesch. Spaniens. Halle: 4to.

388. 1757. **Noticia** de grande batalha que houve na Praça de Mazagam. Lisboa. (Da Cunha, p. 140.)

389. 1758. **Lusitano, Candido.**—Vida do Infante D. Henrique. Lisboa: 4to.

Contains much information regarding the capture of Ceuta and other ports of Morocco. At pp. 92–108 is the history of Juan Fernandez, who lived seven months in the Sahara. See No. 634.

Translated into French by the Abbé de Cournand: Lisbon and Paris, 1781. The real name of the author is said to be P. Francisco José Freire.

390. 1759. **Clarendon, Earl of.**—The continuation of the Life of Edward Earl of Clarendon, Lord High Chancellor of England, and Chancellor of the University of Oxford, being a continuation of his History of the Grand Rebellion from the Restoration to his Banishment in 1667. Written by himself. Oxford: 3 vols. 8vo.

Vol. iii. p. 313:—The king states in parliament that "the new acquisition of ...: Tangier, &c. ... ought to be looked upon as Jewels of an immense magnitude in the Royal Diadem." See No. 334.

391. 1759. **Casiri, Michael.**—Bibliotheca Arabico-Hispana Escurialensis, sive Librorum omnium MSS. quos Arabicè ab auctoribus magnam partem Arabo-Hispanis Compositos Bibliotheca Cœnobii Escurialensis complectitur, Recensio et Explanatio *Opera et Studio* Michaelis Casiri *Syro-Maronitae, Presbyteri, S. Theologiae Doctoris,* Regis a Bibliotheca, linguarumque Orientalium interpretatione. Matriti: 2 vol. folio, pp. 544, 352, with a copious index not paged.

Many of the MSS. catalogued in these volumes are no longer in existence.

392. 1759. **Bougainville, J. P.,** Membre de l'Institut.—Mémoire sur les Découvertes et Établissements fait le long des côtes d'Afrique par Hannon. With map, by Robert de Vaugondi. (Rec. de l'Acad. des Ins.)

Many other editions of the Periplus of Hanno exist. See No. 2.

393. 1760. **Treaty** between Great Britain and Morocco, signed at Fez, 28th July; negotiated by Mark Milbanke, Esq., H.M. Ambassador.

This contains 25 articles, and was renewed by Art. XL. of the treaty of 1791. (Herts. Treat. vol. i. p. 100; Martens, 'Rec. de Traités,' t. i. p. 2.) This last contains a notice of all anterior treaties between Great Britain and Morocco.

394. 1760? **Relação** dos governadores que tem governado a Praça de Mazagam, etc. (Da Cunha, p. 86.)

395. 1761. **Navarro, Juan José,** Marqués de la Victoria, Capitan General de la Armada.—Discursos y diferentes puntos particularmente sobre la Marina. MS. autógrafo del año 1761. En la Bib. de Marina.

"En la pág. 149 está un discurso sobre las plazas de África, cuales deben conservar se y cuales se deben quemar, demoler y abandonar." (Duro.)

396. 1763. **García y Gomez, José.**—Noticias sobre la plaza y fuerzas de Melilla en 1763. MS. en la Bibl. de Ingenieros. (Duro.)

397. 1763. **Hedendaagsche Historie of Tegenwoordige Staat van Afrika.** Waar ins uitmunt De Beschryving van Barbarie [etc.]. Isaak Tirions, Tegenwoordige Staat van Alle Volken, vol. xl. Amsterdam: 8vo.

Morocco occupies chap. vi. pp. 213–309. It contains a good account of the Dutch relations with the Moorish sultans.

398. 1764. **Lia, Nicolás de.**—Declaración tomada á Nicolás de Lia, Calafate de una polacra liornesa en 1764. Contiene noticias de Mogador. MS. en la Bibliot, del Dep. Hidrog. Papeles varios, tomo iii. fol. 124. (Duro.)

399. 1765. **Cardonne, Dennis Dom.,** Secrétaire-Interprete du Roi, pour les Langues orientales, aux Affaires étrangeres, & à la Bibliothèque de Sa Majesté.—Histoire de l'Afrique et de l'Espagne sous la domination des Arabes. Composée sur differens Manuscrits Arabes de Bibliothèque du Roi. Dédiée à Monseigneur le Dauphin. Paris: 3 vol. 12mo, pp. xxiii. + 402, 400, and 336, with index to each volume.

A German translation by De Murr was published at Zürich in 1770.

This work is based on the Arabic MSS. in the Bibliothèque du Roi, and finishes at the conquest of Tlemçen, Tunis and Tripoli by the Turks, and at that of Fez and Morocco by the dynasty of Sherifs. He cites the following Arab authors, whose MS. works are in the Bibl. du Roi at Paris, as his authorities:—**Chebab-ed-din Abul Abbasi:** Historiae universalis, No. 642. **Ahmed ben Abd-ul-vahabi,** cognomine **Novairi:** Historiae Ommiadarum, qui in Hispaniâ regnarunt, No. 703. **Ahmed ben Muhammed el-Moghrebi:** Historia Hispaniae, primae partis Volumen secundum, No. 705. **Ebn el-Kantir:** De redactis in Arabum Potestatem Hispania, No. 706. Historia **Lenazzedini** viziri ultimorum Granatae regum ex familiâ El-Ahmar, No. 758. Historia universalis **Chehabe-ed-din Ahmed el Mokri, al Fasi,** No. 761. Historiae compendium, auctore **Ibn-Khaldun,** No. 769. Lunae resplendentes Marocci auctore **Abdalla ibn Batuta,** No. 825. Historia Califarum ac Regum Arabum in Hispaniâ usque ad annum Hegirae 765, auctore **Ben Abdalla el-Khateb el-Musulmani el-Kortubi.** Historia universalis **Abu-jaferi Mohammed ben Harir el-Tabari.**

400. 1765. **Lucuce, Pedro,** and **Pedro M. Cermeño.**—Discurso sobre conservar ó abandonar los tres presidios menores: Melilla, Peñón y Alhucemas. Sobre las varias opiniones que acerca del particular se emitieron trata D. Martin Fernández de Navarrete en su *Bibliot. Marit.* tomo ii. p. 576. (Duro.)

401. 1766. **Nova Relação** de hum grande combate que a garniçaõ de Praça de Mazagão teve em Domingo de Ramos, etc. Lisboa. (Da Cunha, p. 144.)

402. 1766? **Sagarra, Joseph.**—Compendio de la historia de la España transfretana. Dividido en dos tomos. Compuesto por D. J. de S. y de Baldrich, noble de Cataluña, &c. Barcelona (without date): 2 vol. 8vo. (Duro.)

403. 1767. **Treaty** between France and Morocco, dated 28th May, confirming that of 1682. This was renewed in 1824. (Tab. des Étab. Fr. en Alg. 1841,

p. 422. See also Martens, Rec. de Tr. t. i. p. 57. This contains a notice of all anterior treaties.)

The treaty in question was negotiated by the Comte de Breugnon with the Sultan. The former left Saffi on the 7th of May and arrived at Merakish on the 17th. On the 27th all the French slaves were liberated on very humiliating conditions, and on the 18th of June the ambassador embarked for France. See also No. 550.

404. 1767. **Tratado** de paz y comercio entre España y Marruecos firmado el 28 de Mayo de 1767. Colec. Cantillo. (Duro.)

405. 1767. **Treaty** of Commerce between Denmark and Morocco, signed by Jean Koustroup, 25th July, 1767. (Martens, Rec. de Tr. t. i. p. 64.)

This also gives a notice of anterior treaties.

406. 1767. **Juan, Don Jorge.**—Viaje á Marruecos. MS. que posee el Sr. Conde de Ezpeleta. Citase en la del viaje de D. Francisco Merry y Colom en 1863 donde se extracta. (Duro.) See No. 931.

406a. 1768. **Drake, Edward Cavendish.**—A new Universal Collection of Authentic and Entertaining Voyages and Travels, etc. London. fol.

Contains Windus, No. 342, pp. 490–496; Troughton, No. 379, pp. 497–509; Sutherland's Narrative of the loss of His Majesty's Ship Litchfield (1758–60); and the sufferings of the surviving part of the crew during their slavery in Morocco, pp. 511–518; and Moore, No. 361, pp. 519–532.

407. 1769. **The Female Captive.**—A narrative of facts which happened in Barbary in the year 1756. London: 12mo, 2 vol., pp. 144, 160.

A true story: the lady's maiden name was Marsh; she married Mr. Crisp, but he, having failed in business, went to India, whither she afterwards proceeded. She was captured by a Salli Rover on her voyage from Gibraltar to England. She was taken to Merakish, whence she was subsequently released.

408. 1770? (*circa*). **De Loureiro,** Jacintho de Pina.—Familias de Mazagam. "Manuscripto genealogico em cinco volumes, pertencente ao rev° bispo do Porto." (Often quoted by Da Cunha.)

409. 1770. **Alhucemas.**—Diario de lo acaecido en la plaza y campo de Alhucemas con motivo de la llegada del rey de Marruecos á él en 1770. MS. en la Acad. de la Hist. Quoted in 'Confer. sobre el Hach Moh. el-Baghdády.' (Duro.)

410. 1771. **James, Lt.-Col. Thomas.**—The History of the Herculean Straits, now called the Straits of Gibraltar, including those Ports of Spain and Barbary that lie contiguous thereto. London: 2 vol., 4to, pp. 379, 414.

This work treats principally of the Spanish Coast and of Gibraltar. Vol. ii., pp. 1–42, is "of Tetuan in Barbary; a plan of Ceuta, its history and some other particulars."

411. 1775. [**Bidé de Maurville.**]—Relation de l'affaire de Larache. Amsterdam: 8vo [without author, printer or publisher's name], pp. 398.

It is a description of the "expedition des Chaloupes," under the command of M. de Bauregard, sent on the 27th June, 1765, by M. Duchaffault to punish the corsairs of the Port of Larache. It was a failure—something like a repulse.

412. 1775. **Peñon de la Gomera.**—Diario del Sitio del mismo, desde el 20 de Enero de 1775. MS. en la Acad. de la Hist. (Duro.)

413. 1775. **Moreno, Miguel.**—Descripción del estado actual de la plaza del Peñon, con el diario del sitio que el emperador de Marruecos puso en 3 de Febrero, 1775. MS. en fol., 12 hoj. Dep. de Ingenieros. (Duro.)

414. 1775. **Guidotti, Dr. P.**—Storia dei Mori. Firenze: 8vo.

415. 1775. **Schlözer, August Ludwig von.**—Summarische Geschichte von Nord Afrika, namentlich von Marokko, Algier, Tunis, u. Tripoli. Göttingen: 12mo, pp. 93.

416. 1776–1788. **Gibbon, Edward.**—The History of the Decline and Fall of the Roman Empire. London: 6 vols. 4to.

In the many editions of this famous work there are only general references to the Moors and Mauretania, the invasion of the Arabs, the extinction of Christianity, etc.

417. 1776. **Varela y Ulloa, José.**—Diario y observaciones de .... desde Cádiz por la Costa O. de África hácia el Sur. MS. original en la Bib. del. Dep. Hidrog. África, tomo ii. (Duro.)

418. 1777. **Eysse Eysses.**—Omstandig en waarachter Dagverhaal, van Capt. Eysse Eysses Junior, gevoerd hebbende het driemast galjootschip genoemd de vrouw Geertruy, van St. Lucas naar Amsterdam gedestineerd. Beginnende met deszelfs vertrek van St. Lucas, tot dat hij, op de hoogte van Kaap St. Vincent, door een Maroccaansch roofschip genomen, en te Larache opgebragt wierd. Voorts zijne landreizen door Barbarijen, van Larache naar Marocco, Oud en Nieuw Salee en Mogador, waarin men, buiten de echtste berichten van den tegenwoordigen staat van de Barbaarsche roofkust, der gesteldheid en levenswijze der inwoners, voortbrengselen van 't land en wat den aandacht meer opwekken kan, nog vind, veel bijzonderheden wegens den persoon, ommegang en hofhouding van Ciddy Mahomet Ben Abdala, keizer van Marocco, Fez en Miknes. Gelijk ook wegens de onderhandeling van vreede, tusschen H. H. M. de heeren Staten-Generaal der Vereenigde Nederlanden, en zijne Keizerlijke Majesteit van Marocco. Doormengt met vele wetenswaardige bijzonderheden, wegens de behandeling der Mooren, ten opzichte van de christenen, gedurende het verblijf van bovengenoemde Capt. Eysse Eysses, Capt. Cornelis Hiddes en Capt. Jochem Meijer, aldaar. Als ook eenige omstandigheden, betreffende de dood en begraffenis van Capt. Jochem Meijer. Laatstelijk, eenige aanteekeningen, den schrijver tot Gibraltar ter hand gesteld, mede op de bovenaangehaalde zaken toepasselijk. Gedrukt voor den auteur. Amsterdam: 4to, pp. 37.

419. 1778. **Cassini, Mons. de.**—Voyage to California to observe the Transit of Venus, by M. Chappe d'Auberoche; with the Author's route through Mexico, and the Natural History of that Province, with a Voyage to Newfoundland and Sallee. Folding plate of the City of Mexico. London: 8vo.

420. 1778. **Verdun de la Crenne,** Lieut. de Vaisseau; **Le Chevalier de Borda,** et **Pingre.**—Voyage fait par ordre du Roi en 1771 et 1772, en diverses parties de l'Europe, de l'Afrique et de l'Amérique. Paris: 2 vol., 4to.

Vol. ii., cap. v. pp. 29–49, treats of the "Côtes occidentales d'Afrique depuis le Cap Spartel jusqu'au Cap Blanc."

421. 1778. **Treaty of Peace** between Morocco and Tuscany, signed 6th Feb. 1778. (Martens, Rec. de Tr., t. i. pp. 155.)

This also gives a notice of anterior treaties.

422. 1779. **Höst, Georg.**—Efterretninger om Marókos og Fes, samlede der landee fra 1760 til 1768. Kiöbenhavn: 4to, pp. 291 and Index, with portrait, several views, and a map of Morocco with the names in Arabic characters, though not always correctly.

A German translation by Sussmilch, with the same plates, &c., was published at Copenhagen, 1781, 4to: 'Nachrichten von Marokos und Fes im

Lande selbst gesammlet in den Jahren 1760 bis 1768, von Georg Höst; ausdem dänischen übersetzt.' pp. 221, but without the Index.

This is a work of much merit; in some respects the most exhaustive and accurate ever published. The author was Danish Consul in Morocco for many years.

423. 1780. **Convenio** de amistad y comercio entre el Rey de España y el Emperador de Marruecos, firmado en Aranjuez á 30 Mayo 1780. Colec. Cantillo. (Duro.)

424. 1786–96. **Vella, Joseph.**—Codice diplomatico di Sicilia sotto il governo degli Arabi, publicato per opera e studio di Alfonso Airoldi. Naopoli: 6 vol., 4to.

The following note by Mr. W. Davenport Adams supplies in a concise form the history of this extraordinary literary fraud which is so intimately bound up with the Bibliography of Morocco:—Joseph Vella, whilom Chaplain to the Knights of Malta, being at Palermo in 1782, accompanied the ambassador of Morocco, Mohammed-ben-Olham, on a visit to the Abbey of St. Martin, where he was entertained with the sight of an Arabic manuscript of great antiquity. Listening to the chatter of the monks about their hopes of finding in the Arabian writers the data which would enable them to fill up a lacuna of two centuries in the Sicilian annals, Vella seized upon the idea; and it was not very long before he delighted the hearts of all true Sicilians with the intelligence that the Morocco ambassador, in looking over the conventual library, had put his hand upon a precious manuscript containing the correspondence between the Arabian governors of Sicily and their Sovereigns in Africa.

To confirm the authenticity of this pretended "find," and to increase its importance in the eyes of his patron, Airoldi, archbishop of Heraklia, who, he knew, would spare no cost in the publication of a work of such historic interest, the ingenious Vella invented a correspondence between himself and the ambassador, who had returned to Morocco. The fruit of this imaginary correspondence was not only the assurance that a second and more complete copy of the monastic manuscript existed in the library at Fez, but the discovery of another work, forming a continuation of it, as well as of a series of coins and medals, illustrative and confirmatory of their historical and chronological details.

So brilliantly successful was this little drama that the King of Naples, to whom Vella presented his translation in manuscript, proposed to send him on a mission to Morocco to purchase or copy in the libraries of that State all the Arabian manuscripts bearing on the history of his kingdom.

The translation of the newly-found Arabic manuscript was announced in 1786 in all the journals of Europe, and the first volume was published in 1789, *ut supra*. The sixth appeared in 1793. The first volume was dedicated to the King of Naples and the second to the Queen.

The archbishop next desired to publish the whole of Vella's so-called Arabic text, and for this purpose obtained a fount of Arabic type from Bodoni. An artist, named Di Bella, was commissioned to engrave the coins and medals fabricated by Vella—who, by the way, to render more difficult the detection of his fraud, had obliterated the greater portion of the monastic manuscript. At last, in 1795, at the expense of the King of Naples, were published at Palermo the first volumes of the two editions, the principal of which, a costly folio, contained the Arabic text with the Italian translation of the manuscript

"discovered" at Fez, under the imposing title of "Kitab Divan Misr, or Libro del Consiglio d'Egitto" (Book of the Egyptian Divan or Council). So far, so good. Vella probably thought himself in Sicily safe from exposure; but Nemesis, determined on his punishment, sent, as a tourist to the island of volcanic fires, a German orientalist—J. Hager. As a matter of course he heard of the historical treasure-trove, procured a copy of Vella's folio, examined it, and at once detected the imposture. Airoldi, however, stood gallantly by his fraudulent *protégé*, and, determined at all costs to save him, appointed a commission of five highly respectable persons, against whom the only objection was that they did not know a word of Arabic. Their mode of procedure should have been this; they should have placed before Vella the Arabic text of the "Codice Diplomatico," and have required him to translate at sight whatever passage they thought fit to point out to him. His Italian version would have served them as a comparison to ascertain if he translated accurately, and if he contradicted himself in the printed version. But the absence from the tribunal of an Arabic scholar nullified the verification.

Vella committed to memory two or three passages of his translation; and when the Arabic translation was laid before him he chose whatever page he pleased, as if he had opened upon it accidentally, and proceeded to repeat by rote what he had learned. The commissioners would never have arrived at a satisfactory result if Vella had not at length made a clean breast of it, and acknowledged his deception. Finally, in 1796, he was sentenced to fifteen years' imprisonment, and had abundant leisure, therefore, to regret that visit to the Abbey of St. Martin which had tempted him into the ways of dishonesty. —*Gentleman's Magazine*, 1891.

The mosque libraries of Fez and Merakish, which have been so frequently rumoured to be the hiding-place of valuable manuscripts, are in all likelihood poor in any volumes of more literary importance than a few Korannic commentaries. Even in Clynært's day (No. 48) the former city had little love of literature, and during the civil wars prior to Moulai Ismaïl's reign and after his death, much of this was either destroyed or scattered by the unlettered sovereigns of that period. Many manuscripts were doubtless brought from Spain, and an Embassy was sent at a later date to try and recover some of those which had escaped the ignorant fury of Ximenes. But if we except the MS. of Ibn Batuta which Moura found in Fez (No. 616) and that of the Rudh-Al-Kartas in Merakish from which Beaumier made his translation (No. 871), nothing of any great importance has come to light, though as MSS. were carried away by Golius (No. 157), etc., it is likely enough that the libraries of London, Leyden, Madrid and other European cities may contain what had rendered Morocco so disappointing to the hunter after the relics of a more cultured age. It might, however, be added that, of late years at least, no one has been permitted to ransack any of the mosque libraries. Sir John Drummond Hay in vain offered rewards for any Latin or Greek documents which (*inter alia*), the long-sought-for, lost books of Livy were imagined to be in Fez, though on no sounder ground than the fact that they are nowhere else. See No. 1518.

425. 1782. **Campany.**—Memorias historicas sobre la Marina, comercio y artes de la antigua Ciudad de Barcelona. Madrid: 4 vol., 4to.

Many treaties.

426. 1782. **De Ayala, D. Ignacio Lopez.**—Historia de Gibraltar. Madrid: 4to, pp. xvi. 386, xlviii.; with plan.

This is the best of the early histories of Gibraltar so far as the relations of Morocco and the Rock are concerned.

It was translated in 1845 by James Bell: 'The History of Gibraltar from the Earliest period of its occupation by the Saracens, comprising details of the numerous conflicts for its possession between the Moors and the Christians, until its final surrender in 1462; and of subsequent events; with an appendix containing interesting documents.' London: 8vo, pp. xx. 234, with plan (different from Ayala's).

427. 1783. **Additional Articles** between Great Britain and Morocco, signed at Sallee, 24th May; negotiated by Sir Roger Curtis and renewed by Article XL. of the treaty of 1791. (Herts. Treat., vol. i. p. 110.)

428. 1783–94. **Abu'l Feda Ismael.**—

تواريخ المسلمة من المختصر في اخبار البشر. Annales Muslemici, Res gestae a Mohammede usque ad A.C. 1161. Arab. et Lat. ed. J. J. Reiske. Hafniæ: 5 vols. 4to. See Nos. 25, 613, 623, 720.

Other works on the same subject by Reiske appeared at Leipzig in 1754 and in the 'Magazin für die neue Historie und Geographie,' of Büsching, t. iv. and v.

429. 1783. **Schweighofer.**—Einleitung zur Kenntniss der Staatsverfassung bei der vereinigten Königreiche Maroko und Fes von Schweihofer. Wien: 8vo, pp. 111, with illustrations mostly taken from Höst.

The book concludes with a short bibliography, containing the books from which it is compiled.

430. 1784. **Marokkanische Briefe.** Ausdem Arabischen. Neue vermehrte und verbesserte Auflage. Frankfurt und Leipzig: 8vo, pp. 256.

Morocco letters, written in German by **J. Pezzl.**

431. 1785. **Voyage** dans les États barbaresques de Maroc, Alger, Tunis et Tripoly; ou lettres d'un des captifs qui viennent d'être rachetés par MM. les Chanoines réguliers de la Sainte Trinité, suivies d'une notice sur leur rachat et du catalogue de leurs noms. Paris: 12mo, pp. 193, with List of the ransomed slaves, pp. 8.

The first letter is dated "Salé, 21 Juin 1782," but no author's name is indicated.

The first three letters are regarding Morocco: the first, pp. 1–33, speaks of Salé; the second, pp. 34–62, of Mequinez and Tetouan; the third, pp. 63–81, of Fez and Merakish. This must not be confounded with the work of the Père Lucien Herault, who lived in the 17th century, these letters being dated 1781 and 1782. They give a most faithful account of Sallee and other parts of the country.

432. 1786. **Reise** in den barbarischen Staaten von Morocco, Algier, Tunis und Tripoli, oder Briefe eines aus der barbarischen Gefangenschaft erloeseten Franzoesischen Officiers. Aus dem Franzœsischen übersetzt. Lübeck: 8vo.

433. 1787. **Cholmley, Hugh.**—A Discourse of Tanjier by Sir Hugh Cholmley, Bart. With some account of himself and his Journey through France and Spain to that Place, where he was engaged in building the Mole in the Time of King Charles the Second: and a Journal of the works carrying on; and also some of his Speeches in Parliament. Taken from Manuscripts now in the possession of Nathaniel Cholmley, of Whitby and Howsham in the County of York, Esq. 4to, privately printed.

434. 1787. **Treaty** of friendship and commerce between the United States of America and Morocco (in the Arabic language), signed by Thomas Barclay, 1st Jan., 1787. (Martens, Rec. de Tr., t. i. p. 380.)

435. 1787. **Chenier, Louis-Sauveur de,** Consul Général au Maroc.—Recherches historiques sur les Maures et histoire de l'empire du Maroc. Paris: 3 vol., 8vo, pp. 424, 476, 564.

An English translation, 1788, 2 vol., 8vo, pp. vi. 377 + 427: 'The Present State of the Empire of Morocco, its animals, products, cities, coins, weights and measures; with the language, religion, laws, manners, customs, and character of the Moors; the history of the Dynasties since Edris; the naval force and commerce of Morocco; and the character, conduct, and views, political and commercial, of the reigning Emperor, translated [and abridged most of the historical portion, a third of the work being omitted] from the French.'

Includes a good description of the Empire of Morocco; with maps.

The author of this work, according to Keatinge (1773), "gave great offence to Sultan Homed Ebn Abdallah," by whom on one occasion he was ordered to leave his presence. Jackson, permeated with the weakness of authors on Morocco for disparaging their rivals, speaks slightingly of M. de Chenier's hauteur to the Moors and the difficulty he had in obtaining information owing to his dislike to mingle among the natives. This hauteur was, however, not without its uses, for up to the year 1767—when M. de Chenier refused to honour the order—no Christian was permitted to ride into Saffee on horseback, or Jew enter it except barefooted (as in Fez and other cities to this day), owing to the number of tombs or asylums of saints within the walls. Even the Portuguese, when masters of the place, did not abandon this humiliating custom till the year 1641. Chenier was afterwards Consul-General in Constantinople, where were born his two sons—André-Marie, the poet and politician, who was guillotined on the 25th of July 1794; and Marie-Joseph, the poet and dramatist who, surviving the Reign of Terror, died in 1811.

436. 1787. **Guignes, M. de.** — Massaoudi, Aboul-Hassan Ali.

مروج الذهب و معدان الجواهر *Les Prairies d'Or et les Mines des pierres precieuses.* Not. et Extr. des MSS. de la Bib. du Roi, Paris: 4to, t. i., pp. 1–67.

A notice of his work, contained in several MSS. in the Bib. du Roi, Paris, which have been entirely translated into French. See No. 15.

437. 1787. **Tofiño de San Miguel, Don Vicente,** Brigadier de la real Armada.—Derrotero de las Costas de España en el Mediterráneo y su correspondiente de África. Escrito en los años de 1783 y 1784. Madrid: 8vo, 2 vol.

Another edition was published by the hydrographical department at Madrid, 1832.

438. 1788. [**Jardine, Lieut.-Col. A.**]—Letters from Barbary, France, Spain, Portugal, &c. By an English Officer. London: 2 vol., 8vo. pp. xv. 496, 528.

In vol. i. pp. 1–189 are devoted to the author's travels in Morocco; he went to Mekenes viâ Tetuan, on a mission from General Cornwallis, Governor of Gibraltar.

Translation into German (1 vol.): 'Bemerkungen über Marokko: Desgleichen über Frankreich, Spanien und Portugal. Von ein englischen Offizier wahrend

seinen Reisen durch diese Länder, einigen Freunden im Briefen mitgetheilt ein gedrängter Auszug ausdem Englischen.' Leipzig: 8vo, 1790, pp. xvi. 334.

439. 1788. **Marin, Carlo Antonio.**—Storia Civile e Politica del Commercio de' Veneziani. Vinegia: 8 vol., 8vo.

440. 1789. **Sousa, Fr. Joaõ de.**—Vestigios da Lengua Arabica em Portugal, ou Lexicon Etymologico das palavras e nomes Portuguezes, que trem origem Arabica, composito por ordem da Academia Real das Sciencias de Lisboa. Lisboa: 8vo, pp. xx. 160. A new edition was issued in 1830, with additions by Fr. Moura.

This work, though not without grave faults, is regarded by students of Hispano-Lusitanian Arabic as much superior to that of Martinez Marina in the 4th vol. of the 'Memorias de la real Academia,' and the still more slovenly list of Hanmer in the 1854 'Sitzenbericht' of the Vienna Academy. With the glossary of Dozy and Engelmann, No. 883, it supersedes all other publications of the kind necessary for consultation by investigators of the relations between Spain and Africa.

441. 1789. **Brisson, M. P. R. de.**—Histoire du Naufrage et de la Captivité de M. de B., avec la description des déserts d'Afrique depuis le Senegal jusqu'à Maroc. Genève: 8vo, pp. 20.

In English: Narrative of the Shipwreck and Captivity of M. de Brisson, with Description of the Deserts of Africa from Senegal to Morocco; translated from the French, post 8vo, Perth, 1789. Also in Voyages to the Coast of Africa by Messrs. Saugnier and Brisson, etc. 8vo, 1792, pp. 500.

Also a Polish version: Historya rozbicia sie i niewoli pana Brissona . . . z opisaniem pustyn Afryki od Senegalu az do Maroko. Edycya nowa. Warszawa: 8vo.

442. 1789. **Ahmed ben el-Hassan el-Metsyovvi.**—Itinerary from Fez to Tafilet.

The author wrote an itinerary from Fez to Tafilet, translated into Latin by Prof. Paulus in 1791 in the 'Memorabilien' (Leipsic, 1791, t. i. p. 47), and into French (from the Latin) by Baron C. A. de Walckenaer in 1821 (Recherches Géographiques sur l'intérieur de l'Afrique septentrionale, pp. 457–476). See No. 453.

443. 1789. **Guignes, M. de.**—خريدة العجايب *Perle des Merveilles.* Mélanges de Géographie et d'Histoire Naturelle, par Zein-eddin Omar, fils d'Aboul Modhaffer, surnommé Ebn al-Ouardi, écrivain du XIIIe siècle. MSS. Arabes, No. 577, 588, 589, 590, 591, 592, 593, 594, 601. Not. et Extr. des MSS. de la Bib. du Roi, Paris, 4to, tome ii. pp. 19–59. An edition published at Boulak, A.H. 1302, 8vo. See No. 22.

Several fragments of the Cosmography of Ibn el-Wardi and theses thereon were published at Upsala by Hylander and others between 1784 and 1837.

He divides the Maghreb into three parts: سوس الاقصى, Sus el-Aksa, or country of Sus. The second part includes Spain and Portugal; the third is سوس الادني, Sus el-Adni, which comprises Barca and the desert as far as Egypt.

444. ——كتاب تلخيص الاثار وعجايب الملك القهار *Exposition de ce qu'il y a de plus remarquable (sur la terre) et des Merveilles du Roi Tout-Puissant,* par Abdorraschid fils de Saleh fils de Nouri, surnommé **Yakouti.**

Ouvrage de Géographie composé dans le xve siècle. MS. Arabe, No. 585, pp. 148. l. c., pp. 386–545. See No. 31.

The articles in this work are very short: that devoted to Merakish consists only of a few lines.

445. 1769. **Sacy, Silvestre de,** Baron Antoine Isaac.—

كتاب الجمان مختصر اخبار الزمان *Le livre des perles recueillies de l'abrégé de l'histoire des Siècles*, ou abrégé de l'histoire universelle, par Schéhabeddin Ahmed almokr alfassi. MSS. Arabes, 762 and 769. Not. et Extraits des MSS. de la Bib. du Roi, Paris, 4to, tome ii. pp. 124–163. See No. 33.

He gives the History of Fez up to the time that the Merinides took possession of it, about A.H. 638 = A.D. 1240.

446. 1790. **Sousa, João de.**—Interprete de Sua Magestade para a Lingua Arabica. Documentos Arabicos para a historia portugueza copiados dos originaes da Torre do Tombo com permissão de S. Magestade e vertidos em Portuguez por ordem da Academia real das Sciencias de Lisboa. Lisboa: 8vo, pp. 5 + 190.

This contains many documents of great value with reference to the history of Portuguese affairs in Morocco: Arabic texts and Portuguese translation.

No. III., pp. 6–11. Copia da Carta que El-Rei D. Manoel escreveo aos Moradores de Azamur em idioma arabico. This is dated 22nd Jan., 1504 [?1508].

No. IV., pp. 11–24. Carta dos Moradores de Çafy [Saffee], escrita a el Rei D. Manoel. Dated 2nd July, 1509.

No. V., pp. 25–27. Carta de Aly ben Said escrita a el Rei D. Manoel. Dated 4th June, 1509; he was Governor of Azamor.

No. VII., pp. 30–32. Carta dos principaes da provincia de Xarquia, escrita a el Rei D. Manoel. This was written by Salem bin Omar, Sheikh of the Sherkieh, and others, 16th Feb., 1510.

No. VIII., pp. 32–41. Carta dos Moradores de Messa, escrita a el-Rei D. Manoel. Written by Hamu bin Barka and others, 1st Jan., 1510, from Massat.

No. IX., pp. 42–43. Carta de Açan Mobaty, escrita a Nuno Fernandes de Ataide. Dated 16th Nov., 1511.

No. XII., pp. 53–59. Leis penaes e pecuniarias, que Jaheya ben Tafufa estabeleceo para o governo da provincia de Harrás. (Penal laws and fines established by Yahia bin Mohammed bin Tafoufa in the province of El-Hareth.)

No. XIV., pp. 61–63. Carta de Açan Mobaty, escrita a Nuno Fernandes de Ataide.

No. XV., pp. 63–65. Carta do Xarife Mahomed, Rei de Fez, escrita a el Rei Dom Manoel. Dated 27th March, 1514.

No. XVI., pp. 65–66. Carta do mesmo Xarife, escrita a El-Rei D. Manoel sobre o mesmo assumpto. Dated 30th September, 1514.

No. XVIII., pp. 74–75. Carta da Jaheya ben Abdalla, escrita a D. Nuno Mascarenhas. This is without date, addressed to the Governor of Saffee.

No. XXVI., pp. 98–100. Carta de Abderrhahman ben Haduxa, escrita a El Rei Dom Manoel. Dated 6th May, 1517.

No. XXX., pp. 117–118. Carta do Xarife de Féz, escrita ao Alferes Sebastião de Sousa.

No. XXXVII., pp. 134–135. Carta de Ben Ahmed, escrita ao Capitão Mor de Çafy. Without date.

No. XXXIX., pp. 141–143. Carta dos Moradores de Azamor a el Rei D. João III. Without date, probably written in 1520.

No. XL., pp. 144–145. Carta do Xarife de Féz, escrita a el Rei D. João III. Dated 26th May, 1524.

No. XLI., pp. 146–148. Carta do Secretario do Xarife de Féz a Antonio Leite, Capitão de Cidade de Azamor. Dated 3rd Nov., 1524.

No. XLII., pp. 148–150. Carta do Tio do Xarife, escrita a el Rei D. João III. Dated 27th May, 1524.

No. XLIII., pp. 151–152. Carta do Xarife de Féz a El Rei D. João III. Dated 22nd May, 1525.

No. XLIV., pp. 153–154. Carta do Primo do Xarife a El Rei D. João III. Dated 24th Nov., 1525.

No. XLV., pp. 155–156. Carta del Rei João III. ao Xarife de Féz, escrita em idioma Arabico. Dated 29th Jan., 1526.

No. XLVI., pp. 157–158. Carta do Xarife de Féz, escrita a el Rei D. João III. Dated 29th May, 1526.

No. XLVII., pp. 159–161. Carta do Tio do Xarife, escrita a el Rei D. João III. Dated 22nd December, 1526.

No. LIII., p. 181. Carta do Caied Elattav, escrita a el Rei D. João III. Dated 3rd Nov., 1530.

No. LIV., pp. 182–183. Carta de Mohomed Cabaily, escrita a el Rei D. João III. Without date.

No. LV., pp. 184–185. Carta do mesmo a D. Pedro Mascarenhas. Without date.

No. LVI., pp. 185–186. Carta de Baba Muley Ahmed Buhaçûn, primo do Xarife a Francisco Alvares. Without date.

No. LVII., pp. 187–188. Carta do mesmo escrito a D. Antonio, Conde de Linhares. Dated 30th Oct., 1528.

447. 1790. **Desfontaines, René-Louiche.**—Observations sur le Chêne Ballota ou à glands doux du Mont Atlas. Mém. de l'Acad. Sc., Paris, p. 394, and Journ. phys., vol. xxxviii. p. 375.

448. 1790. **Ceuta.**—Diario del Sitio de Ceuta desde 22 de Setiembre de 1790 hasta el 26 de Diciembre, remitido por D. Rodrigo Rendón. MS. en la Acad. de la Hist. (Duro.)

449. 1791. **Lemprière, William,** Surgeon.—A Tour from Gibraltar to Tangier, Sallee, Mogadore, Santa Cruz, Tarudant, and thence over Mount Altas to Morocco, including a particular account of the Royal Harem. London: 8vo, pp. 477. 2nd ed. 1793. 3rd ed. 1813, pp. 447. See also Pinkerton's Voy., vol. xv. pp. 681–801. A French translation by M. de Sainte-Suzanne, Paris, 8vo, 1801, pp. 383 and map. A German one by Zimmerman appeared in 1792, with map, in "Magazin von merkw. neuen Reisebesch.", vol. viii. (Berlin, 8vo).

The author was sent by the Governor of Gibraltar at the special request of the Sultan to attend Mowlai Absulem his favourite son, then resident at Tarudant; he was subsequently summoned by the Sultan to Morocco, where his professional character gained for him frequent entrance to the hareem, a privilege which no European had enjoyed before. He was detained six months, journeying from Tangier to Mogador, thence to Tarudant, and so back to Tangier, and had recourse to a stratagem to obtain permission to leave the country. See also No. 467.

450. 1791. **Treaty between Great Britain and Morocco,** signed at Salé, 8th April; negotiated by James Mario Matra, Esq., H.B.M. Ambassador. This

treaty contains 43 Articles, and confirmed and renewed all previous treaties. (Hertslet's Treaties, vol. i. p. 112.)

451. 1791. **Abulfedæ Africa,** Arabicè et Latinè, curante J. G. Eichhorn. Gottingæ: 8vo. A Latin translation also in Buching's 'Magazin für die neue Historie und Geographie,' t. iv. et vi. See Nos. 25, etc.

452. 1791. **Rochon, Alexis** (l'Abbé).—Voyage à Madagascar, à Maroc et aux Indes Orientales. Paris: 8vo. 2nd edit., An x. (1802), 3 vol. 8vo (maps). 3rd edit., enlarged, 3 vol. 12mo.

A German translation appeared in 1804: 'A. Rochon's französischen Marine-Astronoms zu Brest und Mitglieds des National-Instituts zu Paris. Reisen nach Maroko und Indien in de Jahren 1767 bis 1773. Aus dem französischen Auszugsweise übersicht mit einer Zugabe herausgegeben von L. F. Ehrmann.' Weimar: 8vo, pp. 168. The "Zugabe" (Appendix) relates entirely to M. de Gremont's voyage to the Island of Bourbon, and his visit to the volcano, translated from Freron's 'Année littéraire,' 1772, vol. vii. pp. 73 *et seq.* A partial English translation appeared in 1792, and a Dutch edition in 1804.

The Abbé Rochon was a native of Brest. He visited Morocco as 'Astronome de la Marine' and nautical surveyor to the man-of-war *L'Union*, which conveyed General Breugnon, Ambassador of Louis XV. in 1767, to Morocco. See also No. 403.

453. 1791. **Paulus.**—Memorabilien. Leipzig: 8vo, 2 vols. Extracts from it translated into French by Walckenaer in his 'Recherches sur l'intérieur de l'Afrique Septentrionale,' pp. 457–464. See No. 452.

454. 1791. **Calvo.**—Resumen de la prevogativas . . . de la S.S. *Trinidad* . . . y los varones que florecieron, &c. Pamplona. (Godard.)

Mention made of two English Trinitarian fathers, Nicholas Firmy and Silvestre, hanged at Morocco, 1st August, 1326 (A.H. 726).

455. 1791. **Ceuta.**—Diario del Sitio de Ceuta en 1791. MS. en la Bib. de Ingenieros. (Duro.)

456. 1791. **Höst, Georg.**—Den Marokanske Kajser Mahomed Ben Abdallah's Historie ved . . . Etatsraad, og Secretair ved det Kongelige Departement for de udenlandske Sager. [Vignette.] Kiöbenhavn: 8vo, pp. 334, Index pp. 16.

457. 1791. **Saugnier.**—Relations de plusieurs voyages à la cote d'Afrique, à Maroc, au Senegal, à Goree, à Galam, etc. Avec des détails intéressans pour ceux qui se destinent à la Traite des Nègres de l'Or, de l'Ivoire, etc. tirées des Journaux de M. Saugnier, qui a été long-temps Esclave des Maures et de l'Empereur de Maroc. On y a joint une Carte de ces différens Pays, réduite de la grande Carte d'Afrique de M. Delaborde, Ancien premier Valet-de-chambre ordinaire du Roi, et Gouverneur du Louvre. Paris: 8vo, pp. 341.

Translated into English, No. 441.

With the French edition there is often (as in English also) bound up the 'Histoire du naufrage de M. Brisson.' See No. 441.

A Dutch edition was published at Maestricht in 8vo, 1792; and a second edition of the French original in Paris, 1797.

458. 1792. **Thurloe, John,** A Collection of the State Papers of. London: 7 vol. fol.

The originals are in the Bodleian Library. These contain many interesting documents connected with Barbary. The papers on Morocco are in vol. vi. pp. 212–213: Consul Maynard to Secretary Thurloe "on Tangiers besieged by the Moors."

459. 1792. **Gostling, G.**—Extracts from Treaties between Great Britain and other Kingdoms, of Articles that relate to the Commanders of Ships of War. London 4to.

Treaties with the following countries: France, Spain, States General, Portugal, Austrian Netherlands, Russia, Sweden, Denmark, Dantzic, Savoy, Turkey, *Morocco*, Algiers, Tripoli, Tunis, and the States of America.

460. 1792. **Follie,** Officier d'Administration dans les Colonies.—Voyage dans les déserts du Sahara. Contenant 1° La relation de son naufrage et de ses aventures pendant son esclavage. 2° Un précis exact des Moeurs, des usages et des opinions des habitans du Sahara. Paris, l'an premier de la République Française: 8vo, pp. 171. See also No. 302.

461. 1792. **Potocki, Jean.**—Voyage dans l'empire de Maroc fait en l'année 1791, suivi du Voyage de Hafez. Recit Oriental, par Jean Potocki. Varsovie: 8vo, pp. 332.

462. 1792. **Azurara, Gomes Eanes d'.**—Chronica dos feitos do Conde Dom Pedro de Meneses, primero Capitaõ que foi na cidade de Ceuta. See Nos. 34, 634.

With reference to a MS. of this work offered for sale, we have the following note:—"An important work by the royal chronicler of Joan I. of Portugal. It was written in 1463, and records the conquest of Ceuta by the Portuguese in 1415—the first step in that series of expeditions which led to the voyage round the Cape and the discovery of America. The capture and annexation of Ceuta are events that belong to the biography of 'Prince Henry the Navigator.' The chronicle was printed for the first time in 1792 by Correa de Serra. The present MS. was transcribed about 1620 from a copy made in 1470 in the house of the Arch-priest of Lisbon, by Joan Gonzalez, Scribe and Biscuit Baker." (Bernard Quaritch, 1886.)

463. 1793–9. **Bruns, Hofrath P. J.**—Neue systematische Erdbeschreibung von Afrika. Nuremberg: 6 vols., 8vo.

For long the best general compilation extant.

464. 1794. **[N. N.]** Abrégé de la Vie de Muley Liezit, Empereur de Maroc, écrite par un témoin oculaire. Imprimé pour l'Autheur à Rome, 1794. 8vo, pp. 134. No date on title-page. "Se vende chez Heritiers C. Sticher a Amsterdam, et chez les Imprimeurs a Londres."

Translated into English by Robert Heron: 'An Account of Muley Liezit late Emperor of Morocco, written by a Spanish Agent at the Moorish Court who has witnessed the events of Liezit's reign, and who, by his intrigues, accomplished that Emperor's fall. . . . . To which is prefixed a short Review of Moorish History, from the earliest times to the Accession of Muley Liezit, with a philosophical inquiry into the causes which have hitherto retarded the civilization of the Moors.' London: 8vo. 1797. [The Life of Moulai El-Yezid = Liezit occupies pp. 151. The "Short Review," paged separately, extends to p. 95.] The original is written in extremely incorrect French, and abounds with Arabic and Lingua Franca idioms.

465. 1794. **Dombay, Franz von.**—Geschichte der Mauritanischen Könige. Agram: 2 vols., 8vo. An abridged translation of the Rudh el-Kartas by Bin Abd-el-Halim el-Gharnati. See Nos. 26, 554, 646, 871, 1523.

466. 1795. **Broussonnet, Pierre-Marie-August.**

Dr. Broussonnet, Deputy to the National Convention, being threatened with arrest at Montpellier, after the fall of the Girondins, fled to Spain, and afterwards to America. He came for the first time to Morocco in the capacity

of Physician to the Minister of the United States. Returning to France after the close of the Reign of Terror, he was nominated Consul at Mogador, and commissioned for the National Institute to explore Morocco and the Canaries. His stay in Morocco extended from 1795 to 1801, and his journeys extended to Mogador, Merakish, Saffi, Fez, Mekenes, Salli, Laraiche, Tangier, and Tetuan; sometimes in company with the Abbé Durand. He did not publish anything himself. But he sent plants to Wildenow at Berlin, Desfontaines at Paris, Gouan at Montpellier, and Cavanelles at Madrid. The last-named published in the *Anales de Ciencias naturales*—"a now scarce publication, which secured for Spain a temporary place in the republic of science which she did not long retain" (Ball)—most of those observed in Morocco. Others were described by Wildenow in his *Species Plantarum*, and by Desfontaines in his *Flora Atlantica* passim. There is a large collection of his plants in the Herbarum of the Faculty of Sciences in Montpellier, though unfortunately the labels have got mixed up. (Cosson.)

467. 1796. **Agrell, Olof.**—Bref om Maroco. Stockholm: 8vo, pp. 661.

These letters were written by the Secretary of the Swedish Consulate-General in Morocco, between the years 1789 and 1791. They were translated into German in 1798 under the title of 'Neue Reise nach Marokko, welche im Lande selbst gesammelte hist. statistische Nachrichten bis in das Jahr 1797 enthält, nebst Anhang von Lemprière's Reise in einen entfernten Theil des Reichs und besondere Bemerkungen über das Innere des Harems. Aus dem Schwedischen mit einer Karte von Fes und Marokko, neu entworfen von Fr. Gottlieb Kanzler.' Nürnberg: 8vo.

Part of this volume is occupied with Lemprière's Journey (No. 449). There is no map in the original Swedish edition.

468. 1796. **[Nobelly].** Nouveaux voyages sur toutes les côtes de la Barbarie et l'empire de Maroc, dans la H^te^ et Basse Egypte, sur les côtes de la Mer Rouge, en Nubie et Abyssinie, etc., etc. Paris, an VIIe de la R. F., 2 vol. in-8, avec cartes et planches. Vol. I., pp. 102–225 contains an account of the "Voyage d'un Consul français" (viz.: Chenier).

469. 1796. **St.-Saveur, Grassel.**—Costumes des habitans d'Alger, Tunis, Tripoli, Maroc, etc. Paris: 4to. Forty-two plates in colours.

470. 1796. **Exportación de Granos.** Real Cédula de Sr M. y Señores del Consejo, por la cual se concede á los cinco gremios mayores de Madrid, privilegio exclusivo por tiempo de ocho años para trasportar á estos Reinos de los puertos de Marruecos, los Granos y demás frutos que produce aquel país, en la forma que se expresa. Madrid: fol. (Duro.)

471. 1797. **Schousboe, Peder Kofed Anker.**—Om arabisk Gummi som Handelsvare i Anledning af Borgeren Suedianis Bemærkninger herover. Bulletin des Sciences, No. 8, 1797. Rafn's Phys.-oeconom. og medico-chir. Bibliothek, 1799, xv. pp. 178–185.

472. ——— Bidrag til Kundskab om Gummi-Sandarak. (*Ibid.* pp. 209–215. "Oversvtat fra Fransk," *i.e.* translated from the French.)

473. 1798. **Durand, l'Abbé Philippe.**

Durand collected plants around Tangier, Tetuan, El-Kasar, Larache, Mogador, Mekenes, and Fez, and was perhaps the first and one of the very few travellers who ever penetrated the robber and wild-beast haunted Forest of Mamora.

His collections went to different botanists; some are in the British Museum Herbarum. He published a thesis for the degree of M.D.: 'De Quibusdam

Chloridis disquisitio botanica,' 1808; but he does not appear to have written anything else on Morocco.

474. 1798. **Sacy, Silvestre de.**—De quelques monnaies arabes, et des monnaies de Tunis, d'Alger et de Maroc. Article in the 'Magasin encyclopédique,' 1798, tome iii.

475. 1798–1813. **Gosselin, P. F. J.**—Recherches sur la Géographie Systématique et Positive des Anciens: pour servir de base à l'Histoire de la Géographie Ancienne. Paris: 4 vols., 4to.

476. 1799. **Leyden, Dr. John.**—Historical and philosophical Sketch of the Discoveries and Settlements of the Europeans in Northern and Western Africa at the close of the 18th century. Edinburgh: 12mo, pp. 442.

Another edition was published in 1817 (2nd edition, 1818) with the title, 'Historical Account of Discoveries and Travels in Africa by the late John Leyden, M.D., enlarged and completed to the present time with illustrations of the geography and natural history [by Professor Jameson], as well as of the moral and social condition of its inhabitants, by Hugh Murray, Esq., F.R.S.E.' Edinburgh: 2 vols., 8vo, pp. xx. 512, and viii. p. 536, with 3 maps.

In chapter iii. vol. ii. of the latter edition is an account of the first voyages to Morocco, Windham's second voyage, Moüette's captivity; Windus' Visit to Mekenes with Commodore Stewart, and the journeys of Lemprière, Jackson, Keatinge, &c. At the end of the volume is a Bibliography of Africa.

An abridged edition, to which Professor Jameson and James Wilson of Woodville (brother of "Christopher North") contributed sections on the Natural History, appeared in 1840 (Edinburgh, 12mo) under the title of 'Narrative of Discovery and Adventure in Africa from the earliest to the present time; with illustrations of the Geology, Mineralogy, and Zoology.'

A French version of the larger work, brought up to date by Cuvilliers, appeared in Paris, 4 vols., 8vo, with 4to Atlas, in 1821.

Leyden and Murray may still be consulted with advantage in spite of the vast changes which the last seventy years have brought about.

477. 1799. **Tratado de Paz.** Amistad, navegación, comercio y pesca entre su Majestad Católica y su Majestad Marroqui concluido y firmado en Mequinez á 1° de Marzo 1799. Colec. Cantillo: also published separately at Madrid. See also Martens, Rec. de Tr. t. ii. p. 175.

478. 1799. **Croisières et negociations** de M^r^. de Kinsbergen, avec des details sur Maroc, par M^r^. le B^on^. de Schoening, rédigés sur son journal allemand par de Champigny. Amst.: 8vo.

479. 1800. **Ouseley, Sir William.**—

كتاب مسالك و ممالك تصنيف ابن حوقل. The Oriental Geography of **Ebn Haukal,** an Arabian traveller of the tenth century. Translated from a MS. in his own Possession. Collated with one preserved in the Library of Eton College. London: 4to, pp. xxxvi. 327. See No. 14.

Page 9. Of the Sea of Roum or the Mediterranean.

Page 16. Of Maghreb, or the west part of Africa, its distance and stages.

Page 51. Mediterranean Sea.

The following also may be consulted:—

1. 'Dissertatio de Ibn Haukalo.' Peter Uylenbroek. Lugdunum Batavorum: 1822, 8vo.

2. 'Description de l'Afrique par Ibn Haucal,' by Baron MacGuckin de Slane, translated from the Arabic. Journ. Asiat., 1842.

3. Arabic Text by De Goeje. Leyden: 1871.

4. A Review of Ouseley's Work, which was made from a most imperfect Persian MS., and is full of errors, by De Sacy, in the 'Mag. Encycl. de Milin.' t. vi. p. 33.

480. 1800. **Schousboe, Peder Kofod Anker.**—Iagttagelser over Vextriget i Marokko, samlede paa en Rejse i Aarene 1791–93. Vidensk. Selsk. Skrifter for 1800, I. Deel, 1 Heft, pp. 1–204, with 7 plates. Separate copies were also reprinted, and in 1801 it was translated into German, 'Beobachtungen über das Gewächsreich in Marokko, gesammelt auf einer Reise in den Jahren 1791–93. 1. Theil. Aus dem Dänischen von J. Ambr. Markussen.' Kopenhagen u. Leipzig: 8vo, xvi., pp. 186, 2 tab.

In 1874 a new edition in French and Latin appeared under the auspices of the Soc. de Climatologie Algérienne: 'Observations sur le règne végétal au Maroc par P. K. A. Schousboe, assesseur au Collége général d'agriculture, commerce et industrie. Edition Française-Latine, établie d'après l'édition danoise-latine de Copenhague (1800), par le Dr. E. L. Bertherand, et augmentée de la synonymie actuelle par M. le Professeur J. Lange, Directeur du Jardin botanique de Copenhague.' Paris: 1874, 8vo, xvi., pp. 202, 7 tab.

This is still the only separate work on the botany of Morocco. Its accuracy was established by Mr. Maw finding, in 1886, *Narcissus viridiflorus* (Schousb.) in the exact spot where it was described in 1791 as growing "copiose," namely "loco elevato, saxoso, humido juxta Tingidem, quanto itur ab arce ad montem *Shebel Kebir*" [Jebel Kebir—"the mountain" near Tangier], "mox dextroversum flectendo cursum inter hortos mare versus," and "in istmo arenoso inter *Gibraltarium* et pagum *St. Rocque* sito et nomine *Neutral ground*."

Schousboe was born in Rönne in Denmark in 1766, and, after the usual studies in Copenhagen University, travelled from 1791–94 in Spain and Morocco. He became Consul in 1800; Consul-General in 1821; and died at Tangier in 1832. The genus *Schousboea* (Schum.) was named after him. (Warming, in the Copenhagen 'Botanisk Tidsskrift,' t. xii. p. 92.)

481. 1800. **Dombay, Frans von.** — Grammatica linguae, Mauro-Arabicae juxta vernaculi idiomatis usum. Accessit vocabularium Latino-Mauro-Arabicum. Opera et studio Francisci de Dombay, Caes. Reg. Linguarum Orientalium Interpretis. Vindobonae apud Camesina: 4to, pp. 5 + 136.

482. 1801. **Damberger, Christian Frederic,** "Carpenter and native of Sch.**"—Travels in the interior parts of Africa from the Cape of Good Hope to Morocco—through Caffraria, the kingdom of Mataman, Angola, Bahahara, and from thence across the Great Desart of Sahara and the Northern parts of Barbary —performed during the years 1781 and 1797. 8vo, pp. 390, 3 col., plates and a map by Ch. J. Goldbach of Leipsic dated Oct. 11, 1800. Two other Engl. trans. in same year.

Also a French translation by L. H. Delamarre in Paris and Strasbourg, An ix., 2 vols., 8vo, pp. 298: viii. + pp. 375, with Goldbach's map, and three beautifully engraved plates from imaginative designs by Collet, "élève de David."

The original work, which we have not met with in any library, was printed by Martini at Leipzig (2 parts, 1801). But though in some respects comparable with the writings of Defoe, it is now known to have been, to use Isaac Disraeli's language, "the ideal voyage of a member of the German Grub Street about his own garret" [viz.: Zacharias Taurinius, a Wittemberg printer (aided by Junge and Tillesius?), who, under the name of Schrödter, issued other fabrications].

483. 1801. **Leo Africanus.**—Leo's aus Africa Reisen in Africa, vom Herrn Hofrath Bruns. Gaspari und Bertuchs Allgemeine Geographische Ephemerides, Vol. VII., Viertes Stuck, April, pp. 309–344. Weimar: 8vo.

In this commentary, which contains some useful annotations, only the Latin of Florianus (Leyden edition) and the Italian of Ramusio are quoted.

484. ——— Solemnia Academica qvvm Serenissimvs et celsissimvs princeps ac Dominvs Gvilielmvs V. Aravsionis et Nassoviæ princeps, Belgii foederati Gvbernator hereditarivs, etc. Rector hvjus Academiæ, magnificentissimvs Ioannem Svam invisurus esset celebranda indicet G. G. Lorsbach h. t. Prorector. Praemittuntur quaedam de Io. Leonis descriptione Africæ. Herbornæ: 4to, Title 1 p. + Dedication to William V., Prince of Orange, afterwards Duke of Nassau-Ufingen 1 p. + text 22 pp., partly in Latin, partly in German.

An Academical discourse before the University of Nassau, forming a sort of prospectus of Lorsbach's forthcoming version of Leo. It is justly severe upon Florianus' version, but is not free from the errors which the ferocious Pro-rector stigmatises in such indifferent Latin.

485. 1801. **Treaty between Great Britain and Morocco,** signed at Fez, 14th June, 1801, by the Sultan Muley Soliman, and negotiated by Hadgi Abderhaman Ash Ash, Governor of Tetuan, and James Maria Matra, Consul at Tangier.

Explanatory articles were negotiated between Sultan Abderaman ben Hisham and James Sholto Douglas, 12th Jan., 1824. (Hertslet's Treaties, vol. iii. p. 17.)

486. 1801. **Dombay, Franz von.**—Geschichte der Sherifen oder der Könige des jetzt regierenden Hauses zu Marokko. Agram: 8vo, pp. 324.

487. 1802. **A Catalogue** of MSS. in the Cottonian Library deposited in the British Museum. A number of MSS. regarding Morocco of the 16th and 17th centuries are mentioned under "Nero" VIII., No. 36 *et seq.*, p. 226.

488. 1803. **Clarke, Rev. James Stainer.**—The Progress of Maritime Discovery from the earliest period to the close of the eighteenth century, forming an extensive system of Hydrography. London: 4to, pp. ccxxx. and 491, with 263 pp. of appendices. Numerous maps and illustrations.

This is marked vol. i., but no more was ever published. At p. 10 is a notice of the taking of Ceuta by the Genoese in 1231; its occupation by the Portuguese in 1414, p. 147; and of subsequent Portuguese exploration on the W. Coast of Africa.

In the Appendix, pp. 171–202, is "An explanatory Catalogue of Voyages and Geographical Works by Mr. Locke."

489. 1803. **Curtis, James.**—A Journal of Travels in Barbary in the year 1801, with observations on the gum trade of Senegal. London: 12mo. A German translation was published at Rostock, 1804, pp. 157.

Mr. Curtis, an army surgeon, was sent from Gibraltar by Governor O'Hara to accompany an embassy (the name of the envoy not being mentioned) to Fez. On recrossing the Strait his vessel was captured by the French, and he and his companions held for a time prisoners in Algesiras. The portion of this work referring to the gum trade is extracted from Golberry's Travels.

490. 1803. **Dombay, Fr. v.**—Beschreibung der gangbaren marokkanischen Gold-, Silber- und Kupfer-Münzen. Wien: 8vo, pp. 53, pl. 1.

491. ——— Ebn-Medini Mauri fessani sententiæ, quædam arabicæ. In Arabic and Latin. Vienna: 8vo.

492. 1803. **Haringman, Hendrik.**—Beknopt dag-journal van een verblyf van agt weeken, in het Keizerryk van Marocco en landreize naar Mecquinez, gedaan in den jaare 1788, by Gelegenheid eener Hollandsche Ambassade, door den Heer .... vormaals Lieutenant by de Cavallerie in Dienst Deezer Republiek. Den Haag: 8vo, pp. 111.

Journal of a residence of two months in the Empire of Morocco with a Dutch Embassy under D. A. Haringman. A German edition, 'Tagebuch, etc.,' by L. F. Ehrmann, appeared at Weimar in 1805.

493. 1804. **Hapdé, J. Bap. Aug.**—Arlequin à Maroc. Folie-féerie en 3 actes. Paris: an xii., 8vo.

494. 1805. **Leo Africanus.**—Johann Leo der Afrikaner's Beschreibung von Afrika (by G. G. Lorsbach, No. 484). Herborn: 8vo.

This, though the latest, is the most difficult of all the versions of Leo to meet with.

495. 1805. **Settala, Luigi.**—Ragguaglio del Viaggio compendioso di un dilettante antiquario sorpreso dai corsari e condotto in Barberia. Milano: 8vo. Con figuras. (Duro.)

496. 1806. **Waddingus, Fr. Lucus.**—Scriptores Ordinis Minorum quibus accessit Syllabus illorum qui ex eodem ordine pro fide Christi fortiter accubuerunt, Priores abiamento, Posteriores sanguine Christianum religionem asseruerunt. Romae: folio, pp. 248 + cviii. The latter portion being an *Index Martyriarum*; at p. civ. is a list of 13 martyrs in Morocco.

497. 1806. **Sacy, Baron Antoine Isaac Silvestre de.**—Chrestomathie Arabe. Paris: 3 vols., 8vo. 2nd ed., 1826–31. With a supplement, Anthologie Grammaticale (1829). See No. 550.

Contains many Moorish Arabic documents in translation.

498. 1807. **Mohammed bin Ahmed bin Ayas El-Hanefi el-Jerkasi.** نشق الازهار فى عجايب الاقطار—*L'odeur des fleurs dans les Merveilles de l'Univers.* Notices et Extraits des MSS. de la Bib. Nationale et autres Bibliothèques. Paris: 4to, t. viii., p. 1. See No. 40.

An account, by **L. Langlès**, of several MSS. at Paris and elsewhere of this cosmography. The author states that the first canton of the West is that of Sus, and describes its principal cities,—Teroudant, Azaky, Tebrezin, the country of the Berbers, Sedjelmissa, Aghmat, Merakish, Derah, Tadlah, Fez-Telemsan, Melilah, El-Mahdyeh, Sebta (Ceuta), Tandjeh (Tangier), &c. This work was probably written about A.D. 1516.

499. 1807. **Merino, Fray.**—Compendio de gramatica para aprender arabigo-vulgare. Madrid: 8vo.

500. 1808–14. **Pinkerton, John.**—A general collection of the best and most interesting Voyages and Travels in all parts of the world, &c. Maps and plates. 17 vol. 4to.

Vol. xv. contains Addison's Account of West Barbary; Windus's Journey to Mekenes; and Lemprière's Tour in Morocco.

501. 1809. **Jackson, James Grey.**—Account of the empire of Marocco, and the district of Suse: with an accurate account of Timbuctoo, the great emporium of Central Africa. London: 4to, pp. 326. Map and 13 plates. A 2nd edition appeared in 1811, and a 3rd in 1814.

The author of this standard treatise (which however was severely handled by the reviewers) resided some time in a commercial and consular capacity at

Santa Cruz (Agadir), but his work does not contain any narrative of personal adventures. These appear in another work, No. 527. There is also a German version: 'Geographisch-statistiche Beschreibung des Königsreichs Marocco aus dem Englischen, mit Anmerkungen, nebst Zusätzen von E. A. W. von Zimmermann.' Halle: 8vo, 1815. Mit karten.

502. 1809. **Jackson's Account of Morocco.**—Review of No. 501. The Christian Observer, vol. viii., p. 287. London.

503. 1810. **Buffa, John.**—Travels through the empire of Morocco. London: 8vo, pp. ix. 244, with a map.

Dr. Buffa went in 1806 from Gibraltar to give medical assistance to the Governor of Larache, whence he journeyed to Mekenes and Fez.

An extract from this was translated into French and published in the 'Mém. de la Soc. d'émulation de Cambrai,' in 1825, by the Abbé Servois.

504. 1811. **Bourke, Thomas.**—A Concise History of the Moors in Spain. London: 8vo.

One of many similar compilations; but it contains a few facts bearing directly on Morocco.

505. 1812. **Abu el-Kassim Ahmed es-Ziani.** See No. 1666.

506. 1814. **Ali Bei el Abassi** [pseudonym of Domingo Badia y Leblich, a Spanich traveller].—Voyages en Afrique et en Asie pendant les années 1803–1807. Paris: 3 vol., 8vo, with atlas, 4to, lxxxv. plates, of which those from i. to xii. bis, relate to Morocco, and 3 maps.

An English version was published at London in 1816, 2 vol. 4to; a Spanish one in 1836, at Valencia, 3 vol. 8vo; and a second French edition at Paris, 1884, 3 vol. 12mo.

The author travelled (1805–6) as a Turk; he landed at Tangier, where he saw the Sultan, passed through Mekenes to Fez, returned to the coast at Rabat, going from thence to Merakish, where he remained for some months, being all the time treated with great magnificence; he returned to Fez, Ujda, and El Araish (Larache), whence he embarked for Tripoli and the further East, including Mekka, which he duly reached. (Edinburgh Review, vol. xxiii. p. 521.) In the Introduction to the English edition full particulars are given of his visits to England, both before and after his memorable journeys. But the man's history is still a mystery. No one seems to have ascertained the source of the funds which he spent with princely magnificence. He pretended to be a native of Aleppo, and was known as Sid Helebi—*i.e.* "the gentleman of Aleppo:" and it is thought that the Spanish Government supplied him with money, though what purpose they had in so doing is not quite clear. Latterly both the Sultan and the officials got suspicious of him, and the rumour spread abroad that he was an agent of Bonaparte. Two renegades in his employ whispered that he had corns on his feet, excrescences unknown to Moors, whose shoes are loose over the toes. The Emperor sent him wives, who were intended to spy upon him; and his departure from the Empire was closely akin to expulsion. Latterly, the absurd report circulated that he was actually Bonaparte himself, and for a time he was called "Parte;" for as "Bona" signifies in the Lingua Franca "good," they would not designate him by a name which might imply that the Frankish conqueror was anything but a fiend. A son of his was living in Fez fifteen years after his departure. Some curious particulars about Ali Bei are given in Jackson's 'Timbuctoo and Housa' (No. 527), pp. 297–304.

507. 1816. **Morocco,** Ali Bei's Travels in. Quarterly Review, April, pp. 298–345.

508. 1816. **Janson, W.**—A View of the Present Condition of the States of Barbary; or an account of the Climate, Soil, Produce, Population, Manufactures, Naval and Military strength of Morocco, Fez, Algiers, Tripoli and Tunis. Also a Description of their Mode of Warfare, interspersed with Anecdotes of their Cruel Treatment of Christian captives, illustrated by a new and correct hydrographical map, drawn by J. J. Asheton. London: 16mo, pp. 172.

509. 1816. **[Tully, Miss.]** Narrative of a ten years' residence in Tripoli in Africa: from the original correspondence in the possession of the family of the late Richard Tully, Esq., a British Consul. Comprising authentic memoirs and anecdotes of the Reigning Bashaw, his family, and other persons of distinction; also, an account of the domestic manners of the Moors, Arabs, and Turks. London: 4to, pp. 370. Map and six coloured plates of costume.

This work, though on Tripoli, contains a good deal about the Moroccan Royal family, and especially about Mowlai Yezid, the heir apparent, and afterwards Sultan of Morocco. See pp. 148, 149, 164, 167, 196, 280.

It has been translated into French: 'Voyage à Tripoli, relation d'un séjour de dix années, etc.; traduit de l'anglais par J. Macarthy.' Paris: 2 vol., 1819. Reviewed in the 'Monthly Review,' 1818, vol. lxxxvii., pp. 113, 121, and the 'Christian Observer,' vol. xvi., pp. 453–467. See also No. 143 of 'Tripoli Bibliography.'

510. 1816. **Morcelli, Stefano Antonio,** Librarian to Cardinal Albani.—Africa Christiana, in tres partes tributa. Brixiæ, 1816–17. 3 vols. 4to, pp. 394, 376, 341; with maps of Mauritania, Numidia, and Tripolita.

This is the great standard work on the African Church.

In the Appendix to vol. i. Morcelli gives a list of several bishoprics, in which Merakish figures as *Bocanum Hemerum* and Fez as *Volubilis*.

511. 1816. **Adams, Robert.**—The Narrative of Robert Adams, a Sailor who was wrecked on the Western Coast of Africa in 1810; was detained three years in slavery by the Arabs of the Great Desert, and resided several months in the city of Timbuctoo. With a map, notes, and an appendix [by Samuel Cox and Joseph Dupuis]. 4to, pp. xxxi. and 231.

A French translation by De Frasans was published in 1817: 'Nouveau Voyage dans l'intérieur d'Afrique fait en 1810: contenant les détails de son naufrage sur la côte occidentale de l'Afrique, sa captivité pendant trois années, chez les Arabes du grand Désert, et son séjour dans la ville de Tombouctou.' 8vo.

There is a second translation in German: 'Reise in den Binnenlanden von Afrika.' Amsterdam: 8vo, 1826. An abstract also appeared in the Geographische Ephemeriden, Bd. 1.

The information given by this shipwrecked seaman is very vague, and even at the time there were strongly expressed doubts whether he had ever been actually to Timbuktu. These doubts have long ago been resolved into certainty, in the minds of every one capable of forming an instructed opinion, that Adams was a gross impostor, in spite of the zeal with which he was defended in the *Quarterly Review* as late even as 1829. Gråberg di Hemsö has summed up the evidence on this point so conclusively that, as it is contained in a little known periodical—the *Antologia* of Florence (No. 197)—we may quote it, more especially as the authenticity of Adams' journey is still

accepted in some quarters: "Adams—this new Damberger, whose real name was Benjamin Rose, a native of Hudson, near New York—was as much at Timbuktu as Damberger had been at Haussa, or Psalmanazaar in the Island of Formosa. His narrative begins in the year 1810, and it is a matter of public notoriety that the brig *Charles*, on board of which he was a seaman, was not shipwrecked until the 11th of October, 1811; a fact which Rose himself deposed to, upon oath, at the American Consulate at Tangier, in the year 1813, in the presence of the late Consul, James Simpson, who redeemed him from slavery in the year 1813, and who, three years later, gave me this very deposition of Rose to read. Afterwards at Gibraltar I saw with my own eyes and read the official Government Gazette, of the 4th of October, 1811, in which the sailing of the brig *Charles* was announced. It follows that every fact and incident described by this impostor to have happened before that period in the year 1811 must be set down as completely false and invented: the more so, as two of Rose's companions in misfortune, both of them seamen in the same vessel and both Americans—viz. James Davidson [Davison] and Martin Clarke (the latter Rose's own brother-in-law)—and an Englishman who had been shipwrecked in another vessel in the same year 1811, all unanimously swore before Consul Simpson, that Rose had always remained with them, or at a short distance, in the environs of Wad Nun, during the whole period of their slavery, and that not one of them had ever been to the south of the parallel of Cape Blanc. Consul Simpson was not the only depositary of a narrative dictated by Rose, previously to the one published in London. Charles Hall, an American merchant settled at Cadiz, with whom Rose lived as a servant during the year 1814, drew up another under his dictation, which I have also had an opportunity of comparing with the one at Tangier, and with the other printed in 1816 by Samuel Coxe [Cock], Secretary of the African Association in London, to whom he had the cunning or the good fortune to sell his tinsel for gold (*i suoi picchi per pappagalli*), notwithstanding the doubts and cogent objections of the sagacious and venerable Sir Joseph Banks and the most learned John Barrow. [Mr. Cock, however, declares that though these eminent men were at first suspicious of Adams' veracity, owing to his errors on some natural history points, 'of the *general* truth of his narrative they did not, even at that early period, entertain any doubt.'] . . . . Notwithstanding, I am far from refusing to this pseudonymous narrative every species of merit . . . . As the narrator understood and spoke Arabic tolerably well, and appears to have been endowed with an excellent memory and a certain spirit of inquiry, it is more than probable that he really collected from Moors and Negroes, who had visited Timbuktu, the information which he afterwards related at Mogadore, Tangier, Cadiz, and London . . . . Such as it is, the narrative published under his name is perhaps the best which we yet possess relative to that famous city, thanks to the notes and observations of M. Dupuis" [British Vice-Consul in Mogador, who believed Adams' story and supplied many memoranda for its elucidation]. The Appendix is full of excellent geographical and ethnographical matter concerning Morocco.

512. 1816. **Keatinge, Colonel Maurice.**—Travels in Europe and Africa . . . . comprising a Journey through France, Spain, and Portugal to Morocco; with a particular account of that empire, &c. London: 4to, 2 vol. (bound in one). Many plates. Vol. i. pp. 346, Preface and Contents xvii.; vol. ii. pp. 274.

The portions relating to Morocco—Mogador to Merakish, and up the coast to Tangier, the regular route of the embassies, one of which (Mr.

Payne's) Col. Keatinge accompanied—are in vol. i. pp. 175–346 and in vol. ii. pp. 1–54. The journey was, however, made in 1785, and though diffuse is valuable for the account it gives of Mowlai Abdalla; of whom a most repulsive portrait serves as frontispiece.

At the time of Keatinge's visit to Merakish there seemed to have been, what is not the case now, quite a little European colony there—including a Venetian who was the Sultan's mercantile agent, a Prussian, and two Spanish monks who had a "hospicio" there, and were engaged in the redemption of Christian captives. There was also a tiny "Danish garden." There were several renegades, including a Frenchman and his French wife, and numbers of people of consequence, the descendants of old renegades, who were always addressed as "Uncles." Among them was an Englishman, Thomas Myers, who bore the title of El-Kaid Boazzer. He professed to be one of the crew of the *Inspector* privateer, wrecked in Tangier Bay in January 1745 (No. 37), —a statement which is confirmed by one "Thomas Mears" appearing in the list of the twenty members of the crew who "turn'd Moors."

513. 1816. **Pyl, R. van der.**—Korte Beschrijving der staten van Barbarije, Marokko, Algiers, Tunis, Tripoli en Fezzan. Benevens een naauwkeurig verhaal van de Roemrijke overwinning, door de Gecombineerde Britsche en Nederlandsche vloten, onder Lord Exmouth en den Baron van de Capellen, onlangs voor Algiers behaald. With view of Algiers. Dordrecht: 8vo, pp. iv. 304. The portion specially upon Morocco is the "IIe Hoofddeel" (pp. 17–41).

514. 1817. **Riley, James.**—Loss of the American brig *Commerce*, wrecked on the Western Coast of Africa in the month of August 1815, with an account of Tombuctoo and of the hitherto undiscovered great city of Wassanah. Hartford, U.S.: 8vo (plates and portrait). London: 4to, pp. 618 (map). Published in French (by Peltier), German and Dutch (2 vols. 8vo) at Paris, Jena and Dordrecht (2 vols. 8vo), in 1818.

The account of Timbuktu and Wassanah is derived from Arab report. The rest of the information regarding the same part of the Morocco coast, on which Cochelet, Adams, Paddock, Scott, Follie, Butler, Douls, and others have been enslaved, is fairly circumstantial.

515. 1817. **Jackson, G. A.**—Algiers: being a complete picture of the Barbary States; their government, laws, religion, and natural productions. A sketch of their various revolutions. A description of the domestic manners and customs of the Moors, Arabs and Turks. An account of the four great Capitals of Algiers, Tripoli, Tunis and Morocco, and a narrative of the various attacks upon Algiers by the European States; including a faithful detail of the late glorious victory of Lord Exmouth. London: 8vo, pp. vi. 411, with map and nine plates in colours.

A compilation in which there is almost as much about Morocco as Algiers.

516. 1817. **Murray, Hugh, F.R.S.E.**—Historical Account of Discoveries and Travels in Africa. See No. 476.

517. 1817–22. **Fanucci, Giov. Battista.**—Storia dei celebri popoli maritimi dell' Italia—Veneziani, Genovesi e Pisani—e delle loro navigazioni e commercio nei bassi Secoli. Pisa: 8vo, 4 Lib.

518. 1817. **Conde, Don Josef Antonio.**—Memoria sobre la Moneda Arabiga y en especial la acuñada en España por los Principes Musulmanes. Mem. de la Real Acad. de la Hist. Madrid, t. v. pp. 225–314, with five plates.

This contains a few coins of Morocco.

519. 1817. **Ceuta.**—Disposición sobre los peligros que amenazaban á la plaza de Ceuta, 24 Oct. Una hoj. en fol. del Consejo de Estado. (Duro.)

520. 1817. **Pananti, Filippo.**—Aventure e osservazioni soprà le costa di Barberia. Firenze: 8vo, 2 parts. Milan: 12mo, 3 vols.

A French translation by Henri de la Salle, Paris, 1820, 8vo, pp. 623. An English: 'Narrative of a Residence in Algiers; comprising a geographical and historical account of the Regency; Biographical Sketches of the Dey and his Ministers; Anecdotes of the late war; Observations on the relations of the Barbary States with the Christian Powers, and the necessity of their complete subjugation. With Notes and Illustrations by Edward Blaquiere, Esq., R.N., Author of "Letters from the Mediterranean."' London: 4to, 1818, pp. xxii. 465, with view (in colours) of Algiers, plan of the City and Bay, with the position of Lord Exmouth's fleet on the 27th of August, 1816, and a map of the Regency of Algiers.

Signor Pananti, an Italian poet of some note in his day, was "taken" during a voyage from England, where he had been a refugee during the revolutionary storm. His work, though specially on Algiers and its institutions, contains many remarks regarding Morocco and the other Barbary States (chaps. xviii., xix., &c.), proposals for subjugating them and colonizing North Africa. See also 'Bibliothèque Universelle,' 1817; 'Eclectic Review,' vol. x., New Series, 1818.

521. 1818. **Paddock, Judah.**—Narrative of the Shipwreck of the *Oswego* on the Coast of South Barbary, and of the sufferings of the Master and the Crew while in bondage among the Arabs; interspersed with numerous remarks upon the country and its inhabitants and of the peculiar perils of that coast. London: 4to, pp. 372.

Captain Paddock was wrecked in 1800. His narrative is a modest account of great sufferings; it is evidently trustworthy.

522. 1818. **Bray, William.**—Memoirs illustrative of the life and writings of John Evelyn, Esq., F.R.S., Author of the 'Sylva,' &c. &c., comprising his diary from the year 1641 to 1705–6, and a selection of his familiar letters, to which is subjoined The Private Correspondence between King Charles I. and his Secretary of State, Sir Edward Nicholas, &c. London: 2 vols., 4to, pp. xxxiii. + 620; 335.

Numerous entries regarding Morocco and Tangier.

523. 1818. **Ceuta.**—Reglamento del Presidio Correccional de Ceuta. Madrid. (Duro.)

524. 1819–21. **Hutton, Catherine.**—The Tour of Africa, with Accounts of the Manners and Customs of the Inhabitants. Selected and arranged by .... London: 3 vols. 8vo.

Abstracts of Lempriere, Jackson, Chenier, and Ali Bey.

525. 1818. **Ibn Batuta.** — De Mohammede Ebn Batūta Arabe Tingitano ejusque Itineribus—Commentatio Academica A.D. VII Martii CIOIOCCCXVIII. Auctor Joannes Gothofrehdus Ludovicus Kosegarten Lingua Oriental. . . . In Universitate Litterar. Jenensi Professor Publicus Ordinarius. Jenæ: 4to, pp. 51. Nos. 28, etc.

This was the first translation in volume form of Ibn Batuta. It is, however, an abridgment, and seems to have been made from a copy of the same MS. as that from which Professor Lee made his English version (No. 556). In 1819 Professor Apetz, also of Jena, published another translation of part of

the same MS., but this contained only the account of Malabar: 'Descriptio Terræ Malabar ex Arabico Ebn Batutæ Itinerario edita, interpretatione et annotationibus instructa per Henricum Apetz. Jenæ MDCCCXIX.' 4to, pp. 24.

Africa forms the fourth section of Professor Kosegarten's translation. It is accompanied by some useful notes and a few geographical extracts from other works. See review by Silvestre de Sacy in 'Journal des Savants,' January 1820. Seetzen gave an account of another abridgment in Zach's 'Monatliche Correspondenz,' Bd. xvii., pp. 293–304, ten years earlier.

526. 1819. **Dumont, Pierre Joseph.** — Histoire de l'esclavage en Afrique pendant 34 ans . . . .; rédigée par J. S. Quesnè. Paris: 8vo. English trans. London: 8vo, pp. 44. Issued as No. iii. of vol. ii. Phillips' 'London Journal of Voyages and Travels.'

Dumont was wrecked in Oct. 1782 on the coast between Oran and Algiers. He was captured by the Berbers ("Koubal" = Kabail), and passed much of his time in Tlemçen and the neighbouring country then to some extent under the control of the Sultan of Morocco, of whom, the various renegades in that region and the native customs he supplies curious if doubtfully authentic particulars.

527. 1820. **Jackson, James Grey,** Resident upwards of sixteen years in South and Western Barbary in a diplomatic and in a commercial capacity.—An Account of Timbuctoo and Housa, territories in the interior of Africa, by **El Hage Abd Salam Shabeeny,** with notes, critical and explanatory. To which is added, Letters descriptive of Travels through West and South Barbary, and across the Mountains of Atlas. Also Fragments, Notes, and Anecdotes; Specimens of the Arabic epistolary style, &c. &c. London: 8vo, xxx. and 547, with 2 maps.

Esh-Shabini travelled extensively in N.W. Africa, to Mecca and Medina, and various parts of Europe. He eventually settled at Tetuan, where he died in 1793.

528. 1820–21. **Conde, Jose Antonio.**—Historia de la dominacion de los Arabes en España sacada de varios manuscritos y memorias arabigas. Madrid: 3 vols., 4to. Vol. i. (1820), pp. 635; vol. ii. (1820), pp. 460; vol. iii. (1821), pp. 268. One volume is practically a translation of Roudh el-Kartas.

Reprinted in Paris in 1840, and in Barcelona in 1844. A French translation by De Marlès was published in Paris in 1825, 8vo, 3 vols., and an English one by Mrs. Foster, 'History of the Dominion of the Arabs in Spain,' in Bohn's Standard Library, 3 vols., with portrait of Abderahman ben Moarra. It is a work of considerable literary merit; but historically it has been quite superseded by Gayangos and Dozy's histories (*q. v.*).

529. 1820. **Gråberg de Hemsö, Jacques,** formerly Swedish and Sardinian Consul in Morocco.—Lettera sulla Peste di Tangeri negli anni 1818 e 1819. Tanger: 8vo. There is also a French edition (Tangier, 1820).

530. 1820. ——— Précis de la littérature historique du Mogh'rib el Acsa. Lyon: 8vo.

The basis of the first chapter of No. 573.

531. 1820. **Shelley, Percy Bysshe.**—The Witch of Atlas. London: 8vo.

A poem of which the sole connection with Morocco is that the "heroine" is supposed to live in the Atlas, which in Shelley's day, even more than in ours, was the secret place of Northern Africa. Mr. Stutfield has, to some

extent, utilised the idea of "A Lady-Witch that lived on Atlas Mountain" in No. 2036.

532. 1821. **Walckenaer, Baron C. A.,** Membre de l'Institut.—Recherches géographiques sur l'intérieur de l'Afrique Septentrionale, comprenant l'histoire des Voyages entrepris ou exécutés jusqu'à ce jour pour pénétrer dans l'Intérieur du Soudan; l'exposition des Systèmes géographiques qu'on a formés sur cette contrée; l'analyse de divers itinéraires arabes pour déterminer la position de Timbouctou; et l'examen des connaissances des anciens relativement à l'intérieur de l'Afrique, suivies d'un appendice, contenant divers Itinéraires traduit de l'Arabe par M. le Baron Silvestre de Sacy et M. de La Porte; et plusieurs autres Relations ou itinéraires également traduits de l'Arabe, ou extraits des Voyages le plus récents. Paris: 8vo, pp. 525, with a map.

The Itineraries, &c. concerning Morocco are those of Ibn Batuta, Leo Africanus, Saugnier and Brisson, Riley, Alexander Scott, &c.

533. 1821. **Scott, Alexander.**—Account of the Captivity of . . . among the Wandering Arabs of the Great African Desert for a period of nearly six years, 1810–1816. Edinburgh Philosophical Journal, vol. iv., No. vii., p. 38. Nouvelles Annales des Voyages, t. viii. pp. 321–353.

Scott was wrecked in 1810 between Cape Nun and Cape Bogador. He, like Adams, pretended to have reached the Niger; but there is no ground for believing that he did, and his entire narrative is untrustworthy. See No. 511.

534. 1821. **Cochelet, Charles.**—Naufrage du brick Français *La Sophie* perdu le 30 Mai 1819, sur la côte occidentale d'Afrique, et captivité d'une partie des naufragés dans le désert de Sahara; avec de nouveaux renseignemens sur la ville de Timectou. Ouvrage orné d'une Carte dressée par M. Lapie, et de Planches dessinées par H. Viernet, et autres artistes distingués. Paris: 2 vols., 8vo. Vol. i., pp. 348; vol. ii., pp. 361. See also No. 535.

The map of North Africa is excellent.

535. 1822. **Cochelet, Charles.**—Narrative of the Shipwreck of the *Sophia* on the 30th of May, 1819, on the West Coast of Africa, and of the Captivity of part of the crew in the desert of Sahara. Map and plates. 8vo, pp. 118. Printed as No. 36 of Phillips' 'London Journal of Voyages and Travels' (1822).

It is a condensed translation of the French original, No.. 534. See also Blackwood's Edin. Mag., vol. xi., p. 316.

536. 1822–25. **Mannert, Konrad.**—Geographie der Griech. und Römer. Thirteen volumes, 8vo, Leipzig, 2nd ed.

The second section of the tenth volume, pp. 1–536, treats of the Barbary States. These form the basis of Marcus and Duesberg's translation, No. 640.

537. 1822. **Hammer, M. de.**—Notice sur l'introduction à la connaissance de l'Histoire. Célèbre ouvrage arabe d'Ibn Khaldoun.

'Journ. Asiatique,' tome i., pp. 267–278, gives a short summary of Ibn Khaldun's work.

538. 1823. **Scott, Alexander,** and **Rennell, Major J.**—Account of the Captivity of . . . among the Wandering Arabs of the Great African Desert; and Observations on the geography of Mr. Scott's Routes in North Africa. (Phillips' New Voyages and Travels. London: 9 vols. 8vo, 1819–23.)

The narrative and comments are in vol. ix.

539. 1824. **Dupuis, Joseph.**—A Journal of a Residence in Ashantee . . . Illustrated with a plate and maps. 4to.

This is not in any part of Barbary, but there are various references to Morocco, where the author formerly resided in the capacity of British Vice-Consul at Mogador, and numbers of Arabic documents in Part ii., pp. i.–cxxxv.

540. 1824. **Treaty** between France and Morocco, renewing that of 1767. Tab. des Étab. Fr., 1841, p. 423.

541. 1824. **Additional Articles** to anterior French Treaties, 17th May. De Clercq's Rec. de Traités, t. iii., pp. 317, 379.

542. 1824. **Latreille,** de l'Académie Royale des Sciences, etc.—Recherches géographiques sur l'Afrique Centrale d'après les écrits d'Édrisi et de Léon l'Africain, comparés avec les relations modernes. Paris: 8vo, pp. 30.

543. 1825. **The Three Brothers;** or, the Travels and Adventures of Sir Anthony, Sir Robert & Sir Thomas Sherley, in Persia, Russia, Turkey, Spain, etc. With portraits [of Sir Anthony Sherley, Lady Teresa Sherley and Sir Robert Sherley]. London: 8vo, pp. iv.+204.

Sir Anthony was employed in 1604 as the Emperor's Ambassador to the King of Morocco (pp. 121–127). This account is the same as in Ro. C.'s 'Collection of Things most memorable, etc.' Purchas (No. 148) and separate volume, No. 125.

544. 1825. **Salzmann, Philippe.**—Plantæ lectæ in itinere Hispano-Tingitano. Paris: folio, 1825, 1826, 1827.

This was a collection of "exsiccata" or dried specimens, with descriptive labels; the Morocco species chiefly from Tangier, 200 species in all, in three fasciculi. Some of Salzmann's plants were published by M. A. P. Decandolle, in his 'Prodromus Systematis Naturalis,' and others remained unpublished except for the collector's MS. names attached to them; though, as these were extensively distributed with his "exsiccata," Mr. Ball considers this equivalent to publication. Very complete sets of them exist in the Kew Herbarium.

545. 1825. **Pepys, Samuel.**—The Diary of Samuel Pepys, Esq., F.R.S., from 1659 to 1669, with memoir, by Richard, Lord Braybrooke. A popular edition of this well-known work forms one of the "Chandos Classics," London: s. d. pp. xii. and 639.

Though the 'Correspondence' (No. 626) is the chief authority for his dealings with that city, this volume contains many remarks about Tangier, from the time that he was appointed a "Commissioner for the Affairs of Tangier" in August 1662 until 1669, when one of his last recorded acts was attending "a Committee of Tangier, where I see all things going to rack . . . by Middleton's doing."

546. 1825. **Lassen, Rasmussen.**—Annales Islamismi sive tabulae synchronistico-chronologicae Chalifarum et Regum orientis et occidentis. Copenhagen: 4to.

547. 1825. **Comyn, Tomás de.**—Ligera ojeada ó breve idea del imperio de Marruecos en 1822. Barcelona: 4to.

Letters written from Tangier in 1822 to D. Manuel José Quentana.

547a. 1825. **Teonge, Henry.**—The Diary of . . . . Chaplain on Board His Majesty's Ships Assistance, Bristol and Royal Oak, Anno 1675–1679, now first published from the original MS. with Biographical and historical notes. London: 8vo. pp. xviii. + 327. An account of Tangier, pp. 29, etc.

548. 1826. **Castiglione, il Conte Carlo Ottavio.**—Mémoire géographique et numismatique sur la partie orientale de la Barbarie appelée Afrikia par les

Arabes, suivi de Recherches sur les Berbères Atlantiques, anciens habitans de ces contrées . . . Milan: 8vo, pp. 126.

Except indirectly, this memoir has little to do with Morocco or its peoples.

549. 1826. **Jonnies, P. D. W.**—Merkantilisch-geschichtliche Darstellung der Barbaresken Staaten u. ihrer Verhältnisse zu den europäischen und vereinigten Nord-Americanischen Staaten. Hamburg: 4to, with map.

550. 1827. **Sacy, Baron Antoine Isaac Silvestre de.** — Chrestomathie Arabe, ou extraits de divers écrivains Arabes, tant en prose qu'en vers, avec une traduction française et des Notes à l'usage des Élèves de l'École royale et spéciale des langues Orientales vivantes. Second éd. corrigée et augmentée. Paris 3 vol. 8vo. First edition, see No. 497.

Contains the following documents relating to Morocco:—

Tome iii. No. xxix. 2. Lettre de l'Empereur de Maroc au Roi de France. Text, pp. 97–100; French translation, pp. 275–278, notes 330–331. The name of the Sultan is not given, but it was probably Mowlai Abd-el-Melek, who ascended the throne in A.D. 1630.

l. c. 3. Traité de paix conclu entre le Roi de France et l'Empereur du Maroc. Text, pp. 100–114; French version, pp. 278–285, notes 332–341. This treaty was made by the Comte de Breugnon in 1767 (see No. 403).

l. c. 4. Lettre de l'Empereur du Maroc à Louis XVI., Roi de France. Text, pp. 114–116; translation, pp. 286–287, notes 342–347. This letter, dated A.H. 1188 (A.D. 1773–74), was written on the occasion of the king's succession to Louis XV.

l. c. 5. Lettre de l'Empereur du Maroc au même. Text, pp. 116–119; translation, pp. 287–289, notes 287–347. Regarding Christians wrecked on the coast and captured by the Arabs, and complaining of the conduct of the Consul.

551. 1827. **Webb, Philippe-Barker.**—Description des espèces du genus *Ratama*. Ann. Sc. Nat., sér. 2, vol. xx., p. 269.

552. 1828. **Baudin, L. S.**, Lieutenant de Vaisseau.—Manuel du Pilote de la Mer Méditerranée, ou Description des Côtes d'Espagne, de France, d'Italie et d'Afrique dans la Méditerranée, depuis le détroit de Gibraltar jusqu'au Cap Bon pour l'Afrique et jusqu'en dehors du détroit de Messine pour l'Europe; traduit pour la Côte d'Espagne et la partie correspondante de la Côte de Barbarie du "Derrotero" ou Routier espagnol de Tofino, rédigé pour le reste par L. S. Baudin. (Premier Partie.) Toulon: 1828 et 1840, 8vo.

A new edition in 2 vol., 8vo, was published in 1857. The first part contains an account of the Mediterranean Coast of Morocco.

553. 1828. **Beauclerk, G.**—A Journey to Morocco in 1826. London: 8vo, pp. 355, with eight plates, including one of the striped Morocco rat (*Mus barbarus*, L.), and "a spider found at Mogadore," the species of which cannot well be identified.

Captain Beauclerk accompanied Dr. Brown of the Royal Medical Staff from Gibraltar to Merakish, in answer to a request for medical aid to the Sultan. He gives a lively and intelligent account of a journey then more seldom made than of late years.

A German translation appeared in Jena in 1829, 8vo.

A Polish version was published in 1830, entitled 'Podroz do Moroko . . . w roku 1826 odbyta.' Warszawa, 12°. And an abridged German one in 1829: 'Reise nach Marocco im Jahr 1826.' (Reprinted from 'Ethnograph. Archiv'.) Jena: 8vo.

554. 1828. **Moura, Antonio,** a Father of the order "de la Merci."—Historia dos Soberanos Mahometanos que reinapão na Mauritania. Lisboa: 4to. Translated from the Arabic work 'Rudh el-Kartas' of Bin Abd-el-Halim. See also Nos. 26, 465, 646, 871, 1523.

555. 1828. **Carrillo de Albornos, Mariano.**—Viage á Tánger y apuntaciones sobre el imperio de Marruecos. MS. de 50 hoj. en la Bib. de Ingenieros. (Duro.)

556. 1829. **Lee, Samuel, D.D.**—The Travels of **Ibn Batuta,** translated from the abridged Arabic manuscript copies preserved in the Public Library of Cambridge. With notes illustrative of the History, Geography, Botany, Antiquities, &c., occurring throughout the work. Printed for the Oriental Translation Committee. London: 4to, pp. xix. and 243. See Nos. 28, 616, 742, 752.

Chap. i. treats of Tangier, Tilimsān, Milyāna, Algiers, Bijāya, Kosantina, Būna, Tūnis, Sūsa, Safākus, Kābis, Tripoli, &c.

Ibn Batuta (Abu Abd-Allah Mohammed Ibn Abd-Allah el-Lawati) left his native city, Tangier, about 1325, when he was twenty-one, and spent thirty years before he ended his wanderings all over the East.

This is a very creditable translation, though not without errors, but owing to its abridged form it gives, as M. Dozy justly remarks, "a very feeble idea of the importance of the original work" (Dict. détaillé des noms des vêtements chez les Arabes, 1845, p. vii.). See also Silvestre de Sacy in 'Journal des Savants' [illegible] & Sept. 1829. It is made from an epitome by the Kātib Mohammed Ibn Jazzī el-Kelbī.

557. 1830. **Caillié, René.**—Journal d'un voyage à Temboctou et à Jenné, dans l'Afrique Centrale, précédé d'Observations faites chez les Maures, Braknas, les Nalons et d'autres peuples, pendant les années 1824, 1825, 1826, 1827, 1828; avec une carte itinéraire, et des remarques géographiques, par **M. Jomard,** Membre de l'Institut. Paris: 8vo, 3 vol., pp. xii. + 475 + 426 + 406, with portrait, plates, and map.

An English translation in 2 vols., entitled 'Travels through Central Africa to Timbuctoo and across the great desert to Morocco, performed in the years 1824–28.' London, 8vo, pp. viii. + 475; xiv. + 501.

On the return journey he visited Fez, Mekenes, Rabat, El-Araish, and Tangier.

The French edition was reviewed (*inter alia*) in the 'Foreign Quarterly Review,' vol. vi., No. xi., pp. 97–121, and accepted as authentic; though serious doubts were unjustly cast on the good faith of M. Jomard, its editor.

558. 1830. **Russell, M.,** Bishop of the Scotch Episcopal Church, Glasgow and Galloway.—History and present condition of the Barbary States, forming vol. xviii. of the Edinburgh Parlour Library. Edinburgh: 8vo, pp. 456. Another edition, 1835.

Chap. ix. is devoted to the Empire of Morocco.

559. 1830. **Observations on the Western Coast of the Morocco State** during my journey from Mogador to Tangier, in July and August 1830. Memorandum respecting the foundation of Mogador, its trade, description of the bay, &c.; with a description of Santa Cruz, Ceuta, Tetuan, and other ports of the State of Morocco, with an account of the death of Major Laing, &c. Folio, MS. in the Library of the R. G. S., London.

560. 1830. **Rennell, Major James.**—The Geographical system of Herodotus examined and explained, by a comparison with those of other ancient authors . . .

with dissertations on . . . the ancient circumnavigation of Africa, &c. 2 vol. 8vo, portrait and maps. Original edition, 1800.

Mere casual references to Morocco, Herodotus being familiar with few places near the Pillars of Hercules. See No. 3, for an analysis of his information.

561. 1830. **Leo Africanus.**—De l'Afrique, contenant la description de ce pays par Léon l'Africain, et la navigation des anciens capitaines Portugais aux Indes orientales et occidentales. Traduction de Jean Temporal. Paris: 4 vols., 8vo, without figures or maps. Vol. i., pp. lv. 640; vol. ii., pp. 581; vol. iii., pp. xvii. 576; vol. iv., pp. viii. 758. "Imprimerie aux frais du Gouvernement pour procurer du travail aux ouvriers typographiques, Août 1830" (de l'imprimerie de L. Cordier). It is a corrected reprint of Temporal's translation, No. 49.

562. 1830. ——— Il viaggi di Giovan Leone e le Navigazioni di Alvise da Ca da Mosto, di Pietro di Cintra, di Annone, di un pilato Portoghese, e di Vasco di Gama; quali si leggone nella raccolta di Giovambattista Ramusio. Nuova edizione, riveduta sopra quelle de' Giunti; in molti luoghi emendata; ed arricchita di sei notizie che il viaggiatore, i navigatori ed il raccoglitore ragguardano. Volume unico. Venezia: sm. folio, pp. 257.

This is a corrected reprint of Ramusio. The notices of that geographer, Leo, and the other authors are signed "B." Leo's work occupies 168 double columned pages. Only one volume was ever issued. This is the Italian text usually quoted.

563. 1830. **Delaporte, M.,** Vice-Consul à Tanger.—Lettre à M. le Baron Silvestre de Sacy. 'Journ. Asiat.,' Paris, 2e Sér. p. 318. Regarding an inscription from Fez, extracted from the work القرطاس الصغير, *le Petit Kartas.*

564. 1830? **Manifiesto** de S. M. el Emperador de Marruecos, Muley Soliman. Traducido literalmente del Arabe al Idioma Italiano, y de éste al Español, publicado de órden de Su Ministro Mahamed Ben-Otman-Tetuan á 22 de la Luna de Ramadan 1207. Mexico: 4to, pp. 8.

565. 1830. **Avezac, A. P. D'.**—Revue critique des rémarques et recherches géographiques annexées au voyages de Caillié à Tembectu, Mem. Soc. Asiatique. Oct. 3rd.

566. 1831. **Avezac, A. P. D'.**—Réponse aux objections élevées en Angleterre contre l'authenticité du voyage de Caillié à Ten-Boktoue. No place or date [Paris]: 8vo., pp. xxxiv., with two plates, one the facsimile of Caillié's original sketch of Timbuktu.

This letter is a reply to an article by Sir John Barrow in the 'Quarterly Review' for January, doubting the entire authenticity of Caillié's narrative, and even questioning whether Caillié had not obtained Major Laing's papers through the instrumentality of Baron Rousseau, French Consul at Tripoli!

567. 1831. **Washington, Lieut.**—Geographical notice of the Empire of Morocco. 'Journ. Roy. Geog. Soc.,' London, t. i., p. 123, with map.

This now classical paper by the late Admiral Washington, who accompanied an embassy to Morocco, appeared in French in 'Bull. Soc. Géogr.,' Paris, March 1832, and in the 'Spectateur Militaire,' 1844. No. 662.

568. 1831. **Hodgson, W. B.,** late American Consul at Algiers.—Hadji Ebned-din El-Eghwaati. Notes of a journey into the interior of North Africa. Translated by . . . Forming part of Miscellaneous Translations from Oriental Languages, vol. i. Printed for the Oriental Translation Fund. London: 8vo, pp. 29.

569. 1831. **Hodgson, W. B.**, late American Consul at Algiers.—Grammatical sketch and specimens of the Berber language; preceded by four letters on Berber Etymologies, addressed to the President of the Society by W. B. Hodgson, Esq., Trans. Amer. Philos. Soc., Philadelphia, vol. iv., New Ser., pp. 48. Reviewed by A. H. Everett in 'North American Review,' vol. xxxv. p. 54.

570. 1831. **Brooke, Sir Arthur de Capel.**—Sketches in Spain and Morocco, 2 vol., 8vo. Vol. i. pp. 432; vol. ii. pp. 392 + Index; pp. 11. Plates (in vol. i.) of a Moorish Female in her Hayk, Tetuan and Tangier; (in vol. ii.) Cape Trafalgar and the Coast of Europe from the Barbary shores, El Uted, Laraiche, and distant view of part of the range of the Lower Atlas.

The author, who died in 1859, was never further than Tangier, Tetuan Laraiche, and the monolith at El Uted (or Mzorah), which he was the first to describe. But his work is still worthy of reference for a picture of the places visited in 1829–30. He describes, for instance, Sweden as still paying tribute to the Moorish corsairs, and how "Moorish brigs of war" sailed eastward "in hopes of pouncing upon some unfortunate Bremen or Hamburgh merchantmen," though at that time piracy and Christian slavery had been abolished by treaty.

571. 1831. **Khalifeh, Mustaffa Ben Abdallah Hagi** [also called Katbi Chelebi].—Tohfat al Akbar fi Asfár al Bahar. The history of the maritime wars of the Turks, translated from the Turkish of .... by James Mitchell. London: 4to, pp. 80. Printed for the Oriental Translation Fund.

This Turkish author, who died in 1657, has a good deal to say indirectly on Morocco, the capture of Tlemsen (pp. 35, 36, 37), the operations of Kheir-ed-din, &c. The title of the work is تحفة الكبار فى اسفار البحار, 'A Gift to the Great concerning Naval Expeditions.'

572. 1831. **Quatremère.**—Notice d'un Manuscrit Arabe contenant la description de l'Afrique ['Man. de la Bib. du Roi,' No. 580]. Notices et extraits des MSS. de la Bib. du Roi et autres Bib. Paris: 4to, t. xii. pp. 437.

This work is entitled اخبار الزمان و المسالك و الممالك, 'History of the time, the routes and the empires,' but in a handwriting posterior to that of the work itself. M. Quatremère believes this to be the work of Abu Obeid el-Bekri. The most interesting part is the description of Africa from the frontiers of Egypt to the Atlantic Ocean. He gives routes from various points to Fez, a description of that city, of Sejalmissa, and of the district of Sus.

573. 1832. **Gråberg, Jacopo di Hemsö.**—Specchio geografico, e statistico dell' imperio di Marocco. Genova: 8vo, pp. 363, with map and plates. 2nd ed. 1834.

The introduction refers to 90 different authors on Morocco; but, like many "facts" in his book, they are not always correctly stated. The volume has indeed always enjoyed an undeserved reputation, and is almost worthy of the contempt M. Tissot (Nos. 1213, 1251) bestows upon it. The author knew little of the country beyond Tangier, and actually copies Leo Africanus' description of places in the interior (without acknowledgment), unaware that all of them had changed in three centuries, and that several of them no longer exist. The lists of the Sultans, &c. are, however, valuable, and there is much information not to be found elsewhere.

The work has an indifferent map and some badly executed, though not untruthful, illustrations, a detailed index, and copious notes.

574. 1833. **Gråberg, Jacopo di Hemsö.**—Das Sultanat Mogh'rib-ul Aksa oder Kaiserreich Marokko. In Bezug auf Landes-, Volks- und Staats-Kunde beschrieben. Aus der italiänischer Handschrift übersetzt von Alfred Reumont. Stuttgart und Tübingen: 8vo, pp. 196.

75. 1834. **Sédillot, J. J.** — Traité des instruments astronomiques des Arabes, composé au treizième siècle par Aboul Hassan Ali de Maroc, intitulé جامع المبادي و الغايات (Collection des commencements et des fins). Traduit de l'Arabe sur le MS. 1147 de la Bib. Royale, par .... Paris: 4to, pp. 630, with 38 plates.

This contains nothing specially about Morocco, but it shows the advanced state of Astronomical Science in that country in the 13th century, when the work was written. See also No. 743.

576. 1834. **Leplay, F.**, Ingénieur des Mines.—Observations sur l'histoire naturelle et sur la richesse minérale de l'Espagne. Paris: 8vo.

This contains a view of the African coast taken from the opposite heights of Tarifa, and details regarding the geology of both coasts of the Straits. (Renou.)

577. 1834. **Murray, Hugh.**—Encyclopædia of Geography, comprising a Complete Description of the Earth, Physical, Statistical, Civil and Political: exhibiting its Relation to the Heavenly Bodies, its physical Structure, the Natural History of each country, and the Industry, Commerce, Political Institutions, and Civil and Social State of all Nations. Edinburgh: 2 vol. 8vo.

Contains a fair digest of all that was then known about Morocco.

578. 1834. **Plüfgel, von.**—Tagebuch der Reise der K.K. Gesandschaft in das Hoflages des Sultans von Morokko 1830. 'Jahrbuch der Literatur,' 1834, iii., iv.; 1835, i., iii.

Narrative of the first Mission sent by Austria to Morocco.

579. 1835. **Gråberg, Jacopo di Hemsö.** — Prospetto del Commercio di Marroco. Firenze, 8vo.

580. 1835. **Lord, Perceval Barton.**—Algiers, with notices of the neighbouring States. London: 2 vol. 8vo, pp. xii. + 320; viii. + 308, with map and engraving of Algiers.

Avowedly a compilation from specified authorities, though very well executed. There are many ethnographical notes on Morocco, and in vol. ii. p. 142 a note is quoted from Dr. Naudi of Malta, dated Oct. 16th, 1816, in which it is mentioned that Tedoest (Tednest), in the Province of Haha in Morocco, was destroyed about the beginning of the last century and rebuilt by the Jews, who at that date were its sole inhabitants; a statement which may be doubted.

581. 1835. **Webb, Philippe Barker.**—Sur le genus Hemicrambe. Annales de Sc. Nat., sér. 3, vol. xvi. p. 246, tab. 19. Walker's 'Annal.' vol. iv. p. 215.

This famous botanist, whose reputation is most intimately connected with the flora of the Canaries, Spain and Egypt, was in Morocco only two months (4th April to 15th June, 1827). But during that time he discovered the cruciferous genus *Hemicrambe* (H. fructiculosa, *Webb*), on Jebel Beni Hosmar, not far from Tetuan, the only locality in which it is known to exist. Mr. Ball found it in the same place in April 1871.

See Gay, 'Bull. de la Soc. bot. de France,' vol. iii. pp. 37–52, and Parlatore, 'Elogio di Filippo Webb,' Florence, 4to, 1856. His collections are in Florence.

582. 1835. **Lopez, Espila.**—El renegado por fuezza. Madrid. Citalo D. S. Estébanez Calderón en su *Manual del Oficial en Marruecos.* (Duro.)

583. 1835–8. **Roscoe, Thomas.**—Spanish and Moorish Scenery . . . . upwards of 80 fine plates from paintings by David Roberts. London: 4 vols., 8vo.

The fourth volume is on Arragon, Valencia and Morocco.

A German edition appeared: 'Ansichten von Spanien, Aragonien, Valencia u. Marocco.' 4 Bde. Mit 84 Stahlst. nach Roberts u. 30 Holzschn. von Bransten u. Wright. London u. Berlin: 8vo, 1835–1838.

584. 1836. **Avezac, A. P. D'.**—Études de Géographie critique sur une partie de l'Afrique septentrionale, itinéraires de Hhâggy Ebn-el-Dyn El Aghouâty, avec des annotations et remarques géographiques, notice sur la construction d'une carte de cette region et un appendice sur l'emploi de quelques nouveaux documens pour la Rectification du tracé géodésique des mêmes contrées. Paris: 8vo, pp. 188, with map.

This first appeared as 'Relation d'un voyage dans l'intérieur d'Afrique septent.' in the 'Bull. de la Soc. de Géog.,' 2e série, t. i. pp. 277 (1835) *et seq.*

The chief itineraries given and commented on are those of Haji ibn-ed-din el-Aghuati, from El-Aghuat to Derneh (pp. 1–140). Sir Grenville Temple's 'Excursions' are also analysed; and the works of Dureau de la Malle and the MSS. of M. de la Porte annotated. But the papers touch only indirectly on Morocco. There is, however, a new map of the entire Barbary States. M. d'Avezac collected many manuscript itineraries, and constructed a special map for the illustration of Ibn-ed-Din-el-Aghuati's journey, which were never published. They are now in Dr. Robert Brown's collection of documents illustrative of the history and geography of Barbary.

585. 1836. **Ablett, W.,** Lieut. R.N.—Survey of the Canary Islands, and of part of the Western Coast of Africa. Journ. Roy. Geog. Soc. London, vol. vi. p. 285, with a chart of the coasts on the scale 1-300,000. Three large charts were subsequently published by the Admiralty. A French translation of the above article, which has little on Morocco, was published in the 'Bull. Soc. Géogr.,' Paris, January 1837.

586. 1836. **Gråberg, Jacopo di Hemsö.**—Remarks on the language of the Amazirghs, commonly called Berebbers, with observations and notes of the Rev. G. C. Renouard. London: 8vo.

587. 1836. **Guillon, Marie Nich. Sylv.,** Évêque du Maroc.—Lettre pastorale aux prêtres et fidèles catholiques répandus dans le royaume de Maroc. 8vo.

588. 1836. **Treaty of Peace** and friendship between the U. S. America and Morocco, signed at Mequenez, 16th September, by James R. Leir. Martens, Rec. de Tr., t. iv. p. 443; also Martens, Nouv. Rec. Gén. de Tr., t. xiii. p. 685.

589. 1836. **Jaubert, Amédée.**—Géographie d'Edrisi, traduite de l'Arabe en français, d'après deux MSS. de la Bibliothèque du Roi, et accompagnée de notes. T. i. 1836; t. ii. 1840. Rec. de Voy. et de Mém. de la Soc. de Géogr. de Paris, t. v. and vi. See also Nos. 95–153.

IIIe. Climat, 1re Section, includes Sous, El Acsa, Pays des Berbers, Noun, Sedjelmasa, Dara', Aghmat, Maroc, Fez, Meknèz, Sala, Tlemsan, &c.

590. 1836. **Quatremère.**—Mémoires historiques sur la dynastie des Khalifes Fatimites. Vie du Kalife Fatimite Moëz li-din-Allah. Paris: Journ. Soc. Asiat., 3e sér., t. ii., pp. 96 *et seq.*

591. 1836. **Gervais, P.**—Énumeration de quelques espèces de Reptiles provenant de Barbarie. Ann. Sc. Nat. (2), vi. pp. 308-313. [A few also from Morocco.]

592. 1836. **Particulars of the Claims of Messrs. M. L. Bensusan & Co.** on the Government of Morocco for Compensation for the loss of the merchant-schooner and cargo of the *Ann Lucy*, plundered near Mazagan on the Atlantic Coast of the dominions of the Emperor of Morocco in the year 1823, together with copies of the official correspondence relating thereto, both with the Sultan of Morocco, His Britannic Majesty's Consul-General at Tangier and the Colonial Department in London. London: 8vo, pp. 23.

A copy of this pamphlet exists in the Public Record Office: F. O. Papers, vol. No. 3, Jan. to Dec. 1836.

593. 1836-45. **Didier, Charles.**—Le Maroc. Revue des deux Mondes, 1 Août, 1 Novembre et 15 Décembre 1836, 1 Février 1838, 1 Août et 1 Septembre 1845. See also No. 669.

They relate entirely to Tangier, Tetuan and Ceuta.

594. 1836. **Stuewe, Friedrich.**—Die Handelszüge der Araber unter den Abassiden durch Afrika, Asien, und Osteuropa. Berlin: 8vo.

595. 1837. **Gråberg, Jacopo di Hemsö.**—Vocabulary of names of places, &c., in Moghrib el Acsa, in the Empire of Morocco. Journ. Roy. Geogr. Soc., London, vol. vii. pp. 243.

A paper of very little value—mere guess-work by a man who had never travelled in the interior of the country, and indeed was unfamiliar with any place except Tangier, where he was Swedish and Sardinian Consul.

596. 1837. **Romero, Eugenio Maria.**—El Martirio de la jóven Hachuel, ó la Heroina hebrea. Gibraltar: 8vo.

This is an account of the decapitation at Fez of a Jewish girl (Sol Hachuel) for supposed apostasy from Mohammedanism, which she had embraced. It is referred to in the 'Times of Morocco,' No. 46, Sept. 25th, 1888, and an account is also to be found in the 'Archives Israélites,' Nos. 22 to 24, vol. xli. (1880). See also No. 741.

597. 1837. **Marcel, J. J.**—Vocabulaire Français-Arabe des dialectes vulgaires Africains: d'Alger, de Tunis, de Marok, et Égypte. Paris: 8vo, pp. xxi.+576.

Marcel has incorporated into this work, without acknowledgment, the vocabulary of Dombay, No. 48. Hélot also, in his 'Dict. de poche français-arabe et arabe-français,' borrowed freely from the same source, equally without mentioning the fact.

598. 1837. **Aboull Feda, Ismael.**—Géographie d'Aboulféda, *texte Arabe*, par Reinaud et MacGuckin de Slane. Paris: 1e livr., 4to.

599. 1837. **Avezac, A. P. D'.**—Esquisse générale de l'Afrique, aspect et constitution physique, histoire naturelle, ethnologie, linguistique, état social histoire, exploration et géographie. Paris 18mo, pp. 144. Another edition in 1844.

600. 1837. **Taylor, J., Baron.**—Voyage pittoresque en Espagne, en Portugal et sur la côte d'Afrique de Tanger à Tétouan. Paris: 4to, 2 vols., with 110 plates.

In 22 livraisons of various "formats." Begun in 1815. The engravings are by Barber, Bryne, Cooke, Finden, Goodal, Greathatch, Holles, Lekeux,

Lewis, Pye, Redaway, Skelton, Smith, Wallis, and others. Thus, though in French, it is almost an English work, Taylor being, like most of his engravers, of English birth.

601. 1837. **Berard, Aug.**—Description nautique des côtes de l'Algérie. Paris: 8vo, 15 plates. A second edition in 1839.

This contains views of Cap del Agua and the Zafarine Islands.

602. 1837. **Spain and Barbary.**—Letters to a younger sister during a visit to Gibraltar, Cadiz, Seville, Tangier, etc. London: 8vo.

603. 1838–49. **Bossi, Giacomo.**—I Negri della N'negrizia occidentale e della interno e i Mori e Arabi errante del Saara e del deserto di Libia. Torino: 3 vols., 8vo. Vol. i., pp. viii. 719; vol. ii., pp. cvi. 703, with 2 large folding maps; vol. iii., pp. 759, with folding map.

May be usefully referred to for an account of the traders, &c., from beyond the Atlas, who travel to the Sudan.

604. 1838. **Cannon, Richard,** Adjutant-General's Office, Horse Guards.—Historical Record of the Second or Queen's Royal Regiment of Foot. Containing an account of the formation of the Regiment in the year 1661, and of its subsequent services to 1837. London: 8vo, pp. 95, with illustrations. A second edition (pp. 12 and 152), bringing the records up to date, was published in 1839. A third was issued in 1840.

This—the second Tangier regiment—was raised in the purpose of providing a garrison for Tangier, and the first command was conferred upon Henry, second Earl of Peterborough. It was subsequently constituted the Royal Regiment of Dragoons, and remained at Tangier till 1684.

This volume contains a short account of the British occupation Tangier.

605. 1838. **Walckenaer, Baron Ch. Ath.,** Membre de l'Institut.—Rapports sur les recherches géographiques, historiques, archéologiques, à entreprendre dans l'Afrique septentrionale. Paris: 4to, pp. 83.

606. 1838. **Augustin, Freiherrn Ferdinand von.** — Erinnerungen aus Marokko, gesammelt auf einer Reise im Jahre 1830. Wien: 8vo, with 20 illustrations.

607. 1838. **Hase.**—Recherches archéologiques en Algérie. [Partly on Morocco.] Comptes-rendus de l'académie des Inscriptions.

608. 1838. The French in Africa. London: 8vo.

609. 1839. **Davidson, John.**—Notes taken during Travels in Africa. London: 4to, pp. 218, with a view of Wad Nun, the River Draa. A posthumous work, printed for private circulation only.

Narrative of a journey to Morocco, Sus, and the Wad Nun in 1835–36. He was killed near Igidi, "in the district of Haneda, four days' journey from Tatta," on his way to Timbuktu. In the appendix *inter alia* there is (p. 208) the history of Abu Bekr es siddek extracted from the Journ. Roy. Geog. Soc., vol. vi. pp. 100–110. *Vide* also letter from Mr. Davidson in Journ. Roy. Geog. Soc., vol. vi. p. 429, and Notices of him, Ibid., vol. vii. p. 144.

610. 1839. **Vinchon, Baron de.**—Histoire de l'Algérie et des autres états barbaresques depuis le temps le plus ancien jusqu'à ce jour, etc. Paris: 8vo, pp. 245, with 3 folding plates.

Chapter ix., part i., is on the "Royaume de Maroc" (pp. 155–160).

611. 1839. **Guilbert, Aristide.**—De la Colonisation du Nord de l'Afrique. Nécessité d'une association nationale pour l'exploitation agricole et industrielle de l'Algérie. Paris: 8vo, pp. 556. Second edition in 1841.

At pp. 497 to 551 is a "Liste bibliographique des auteurs qui ont écrit sur l'Afrique septentrionale depuis la conquête de cette contrée par les Arabes."

612. 1839. **Möller, Dr. J. H.**—Liber climatum, auctore Scheicho abu Ishako el Faresi, vulgò El Istachri, ad similitudinem codicis accuratissime delineandum et lapidibus exprimendum curavit J. H. M. Gotha: 4to.

613. 1839. **Solvet, Ch.**—Description des pays du Magreb, texte Arabe d'Abou'lféda, accompagné d'une traduction française et de notes. Alger: 8vo, pp. 190. See also Nos. 25, 428, 623, 720.

This contains extracts from the Geography of Abu'lféda relative to the North Coast of Africa: ذكر بلاد الغرب.

Among other places in Morocco described are Asfi (Saffi), Sala, Sus-el-Aksa and the town of Tarudant, Ksar-Abd-el-Kerim, "four stations from Sebtah (Ceuta) and north-east of Micnâsah (Mekenes), and Micnâsah is to the north of Fas (Fez)," Thandjah (Tangier) Sebtah (Ceuta), "from which when the air is clear can be seen El-Djezîrat-el-Khodrâ (Algesiras), a town of Andalus" (Spain), Fâs (Fez), Marekish (city of Morocco), Dar'ah (Draa), Tadila ("between Marekish and the dependencies of Fâs in the Gharb-el-Aksa"), and Sedjelmasah (Sejelmessa).

614. 1839. **Conti, Ramón de.**—Proyecto de mejoras aplicables á los presidios de África, para que aquellas plazas puedan sostenerse en adelante con sus propios recursos, y produzcan á la nación una renta anual, con otras ventajas positivas. MS., fol., pp. 26. En le Dep. de Ingenieros. (Duro.)

615. 1839. **Embajada** del Rey de Portugal al Sultan de Marruecos. Relación publicada en 'O Panorama, jornal litterario.' Lisboa. (Duro.)

This was under the Marquis de Cavalho, who went over the same route as that followed by Liedekerke in 1773.

616. 1840. **Ibn-Batuta.**—Viagens extensas e dilatadas do celebro Arabe Abu-Abdallah, mais conhecido pelo nome de Ben-Batuta, traduzidas por **Jose de Santo Antonio Moura.** Lisboa: 4to, pp. vii. 533 [with 3 pp. of errata].

Father Moura died before the second volume was ready, and the Royal Academy of Sciences of Lisbon confided the completion of the work to **Father Castro.** Only one volume was ever printed, ending with the arrival of Ibn Batuta in the Punjaub, and the customary pious peroration to Allah and the Prophet and all his companion train. The translation is from a MS. obtained by Padre Moura in Fez, some time during 1797 or 1798. It is a faithful translation, but spoilt by the numerous omissions which the translator thought fit to make under the idea that they would be "no advantage to history." Among these are the names of the Cadis and learned men then living in Alexandria, Ibn Batuta's account of the Emirs of Cairo, and so forth.

See also Baron de Slane, 'Journal Asiatique,' March 1843, pp. 181–246; Fresnel, *Ibid.*, Jan. 1849, pp. 61–63; Dulaurier, *Ibid.*, Feb. and March 1847 (also separately: Paris, 1847, 8vo, pp. 86), who has given a French translation of the chapter on the Indian Archipelego. Nos. 28, 525, 556, 742, 752.

617. 1840. **Gayangos, Pâscuel de.**—The History of the Mohammedan Dynasties in Spain; extracted from the Nafthu-t-tib Min Ghosni-l-Andalusi-R-Rattib

Wa Tárikh Lisánu-d-dín Ibni-l-Khattíb by Ahmed ibn Mohammed Al Makkari, a native of Tlemsán. Translated from the copies in the Library of the British Museum, and illustrated with critical notes on the history, geography, and antiquities of Spain, by Pascuel de Gayangos, late Professor of Arabic in the Athenæum of Madrid. London (Oriental Trans. Fund): 2 vols., 4to. Vol. i., pp. xxxix. + 548 + xcv.; vol. ii., pp. vii. + 543 + clxxii., including an exhaustive index.

This monumental work, though specially on the history of Moorish Spain, is indispensable to the study of the history of Moorish Africa.

618. 1840. **Nicholson, John.**—An account of the establishment of the Fatemite dynasty in Africa, being annals of that province from the year 290 of the Hegira to the year 300, extracted from an ancient Arabic manuscript ascribed to El-Mashûdi. Tubingen: 8vo.

619. 1840. **Mas Latrie, le Comte L. de.**—Principaux traités de paix et de commerce de la France avec les États barbaresques. (Extracted from the 'Tableau de la situation de l'Algérie en 1840.') Paris: fol.

620. 1840. **Berthelot, Sabin,** de Marseille, Sec. Gén. de la Soc. de Géogr.—De la Pêche sur la Côte occidentale d'Afrique et des établissements les plus utiles au progrès de cette industrie. Ouvrage publié sous les auspices de MM. les Ministres de la Marine et du Commerce. Paris: 8vo, pp. 302.

Chaps. iii. and iv. are especially devoted to the W. African fisheries, and their superiority to those of Newfoundland.

621. 1840. **Avezac, A. P. D'.**—Analyse géographique d'un voyage au lac Pamiefoil et au pays de Yôlof en 1839 (avec une carte).—Note sur quelques itinéraires de l'Afrique septentrionale.—Note sur les documents recueillis jusqu'à ce jour pour l'étude de la langue berbère et sur divers manuscrits anciens en cette langue qu'il importe de rechercher. Bull. de la Soc. Géogr., Paris, Oct.

The author quotes thirty-three works on the Berber language relating to Morocco: Höst, Chenier, Jackson, Gråberg, Washington, &c. This list is reproduced in Hodgson, No. 569, pp. 35–38. Also separately: Paris, 8vo, 1840.

622. 1840. ——— Note sur quelques itinéraires de l'Afrique septentrionale par M. d'Avezac. Bull. Soc. Géogr., Paris, October. See No. 621, which is a reprint of this.

623. 1840. **Reinaud** and **Baron MacGuckin de Slane.**—Géographie d Aboulféda كتاب تقويم البلدان. Texte Arabe, publié d'après les MSS. de Paris et de Leyde, aux frais de la Société Asiatique. Paris: 4to, pp. xlvii. and 537. See also Nos. 25, 428, 613, 720.

624. 1840. **Didier, Charles.**—Thecla. Bruxelles: Société Belge de Librarie.

A tale, the scene of which is laid at Tetuan at the time when that town was the residence of foreign representatives—consuls in those days.

625. 1840. **Rey, A.**—Le Maroc et la Question d'Alger. Revue des deux Mondes, 1 Décembre.

626. 1841. **Pepys, Samuel.**—The Life, Journals, and Correspondence of Samuel Pepys, Esq., F.R.S., Secretary to the Admiralty in the Reigns of Charles II. and James II., including a Narrative of his Voyage to Tangier, deciphered from the Short-hand MSS. in the Bodleian Library, by the Rev. John Smith, A.M.,

Decipherer of 'Pepys' Memoirs.' Now first published from the originals. [With portrait of Pepys.] 2 vols. London: 8vo, pp. 456; 367.

Pepys went to Tangier as Secretary of the Tangier Committee to superintend the evacuation of that city.

627. 1841. **Thomassy, Raymond.**—Demande en mariage par Muley Ismail, Empereur de Maroc, de la Princesse de Conti, fille naturelle de Louis XIV. et de Mademoiselle de la Vallière en 1700. France Maritime, vol. iv., p. 173. See also No. 312.

628. 1841. **Ministère de la Guerre.**—Tableau de la Situation des Établissements Français dans l'Algérie en 1840. Paris: 4to, pp. 452.

In addition to much valuable information regarding Algeria before and after the conquest, this volume contains a series of appendices of exceptional interest. The first three relate exclusively to Algeria. No. iv. is a "Précis analytique de l'histoire ancienne de l'Afrique Septentrionale" during the following periods: Carthaginian, Roman, Vandal, Byzantine; including an account of the introduction of Greek civilization into the Cyrenaica. No. v. "Division territoriale établie en Afrique par les Romains." No. vi. "Principaux traités de paix et de commerce conclus par la France avec les Régences Barbaresques." No. vii. "Bibliographie Algérienne."

629. 1841. **Rotalier, Claude de.**—Histoire d'Alger et de la piraterie des Turcs dans la Méditerranée à dater du xvie siècle. Paris: 2 vol., 8vo.

This work is well written. It terminates with the capture of Algiers, but it contains only stray allusions to Moroccan piracy.

630. 1841. **Grâberg, Jacques, di Hemsö.**—Observations authentiques sur la peste du Levant, et sur la vertu spécifique de l'huile de l'olive contre cette effrayante maladie. Rédigées pour la Seconde Réunion scientifique italienne, Turin, 1840. Florence: 8vo.

He gives the result of cases observed at Tangier, and an historical précis of the appearance, progress and extinction of the disease. This is largely a *réchauffé* of No. 529.

631. 1841. **Slane, le Baron MacGuckin de.**—Histoire de la province d'Afrique et du Maghrib, traduite de l'Arabe d'En-Noweiri. Journ. Asiat. 3 sér. tome xi., p. 97 *et seq.* See Nos. 27, 738.

This commences with the invasion of N. Africa by the Mohammedans in A.D. 647–8.

632. 1841. **Ebn-Khaldun.** — Histoire de l'Afrique sous la Dynastie des Aghlabites et de la Sicile, etc., accompagné d'une traduction française et de notes par Jas. Noël des Vergers, Arabe et Français. Paris: 8vo, pp. xxxix., 80, and 201. Ebn Khaldun,—a patronymic derived from an ancestor, Khaldun Ebn Othman,—was named Abu Zeid Abdurrahnan. He was a native and magistrate of Tunis. See Nos. 29, 738, 789, 999.

633. 1841–56. **Movers, F. C., Dr.**—Die Phönizier, Religion, Politik, Geschichte und Staatsverfassung, Geschichte der Colonien, Handel und Schifffahrt. 3 vols. (unfinished). Bonn and Berlin: 8vo.

It gives a good account of the Phœnician settlements on the coast. It is supplemented by the same writer's article "Phoenizien" in Ersch and Gruber's Encyclopædia (1848).

634. 1841. **Azurara, Gomes Eanes de.**—Chronica do descobrimento e conquista da Guiné, escrita pelo chronista Gomez Eannes de Azurara; published by the Viscount de Santarem. Paris: 4to. No. 34.

This is the reproduction of a MS. of 1453 found by M. Ferdinand Denis in the Bibliothèque Nationale of Paris. It gives the history of Juan Fernandez, who landed on the coast of the Sahara in 1445 and lived seven months with the natives. See No. 389.

635. 1841. **Morocco** and its facilities for American commercial enterprise. Hunt's Merchants' Magazine, vol. v. No. 6.

636. 1841–46. **Abu'l Feda, Ismael.**—تقويم البلدان. Géographie, en Arabe, publiée d'après deux MSS. par C. Shier. Édition Autographe. (With all the vowel-points.) Dresde: folio.

637. 1842. **Scott, Colonel, K.S.F., K.C.**—A Journal of a residence in the Esmailla of Abd-el-Kader, and of travels in Morocco and Algiers. London: 8vo, pp. 264.

The author had been a Carlist officer, and subsequently accepted the post of Chief of the Staff to Abd-el-Kader, whom he is fond of styling "His Royal Highness." He is very strongly hostile to the French, whom he advises to retire from Africa, "there being but little glory to be gained there." He visited Tetuan, Ujda, Fez and other places in Morocco. Reviewed in 'Modern Review,' vol. clviii., p. 202.

638. 1842. **Wappäus.**—Entedeckungen der Portugiesen unter Heinrich dem Seefahren. Göttingen: 8vo.

639. 1842. **Thomassy, Raymond.**—Des Relations politiques et commerciales avec le Maroc. Paris: 8vo.

This originally appeared in the 'Nouv. Ann. des Voyages.' A much better edition appeared in 1845, and a later one in 1859. See No. 683.

640. 1842. **Mannert, Konrad.**—Géographie ancienne des États barbaresques. D'après l'Allemand de Mannert par L. Marcus et Duesberg, avec des additions et des notes par L. Marcus: ouvrage publié sous les auspices et par ordre du Ministère de la Guerre. Paris: 8vo, pp. 803.

This work gives a detailed description of North Africa from the confines of Egypt to the Atlantic, according to Greek and Roman authors. Book iii. treats of Mauretania, and of this chaps. vi., vii., and viii. are devoted to Mauretania Tingitana; chap. ix. to the voyage of Hanno, and app. iii. contains a supplement to the Bibliography of Algeria published in the 'Tableau des Étab. Franç. en 1840.' It is a translation of part of No. 530.

641. 1843. **Borrow, George.**—The Bible in Spain. London: 8vo.

Contains the account of a visit to Tangier.

642. 1843. **Londonderry, Marchioness of.**—A Journal of a three months' Tour in Portugal, Spain and Africa. 8vo. [London: privately printed.]

643. 1843. **Hodgson, Wm. B.**—The Foulahs of Central Africa and the African Slave Trade. [A communication to the National Institute, Washington.] Savannah, Georgia: 8vo, pp. 24.

A few incidental references to the Berbers of Morocco.

644. 1843. **Bacon, Dr. D. Francis.**—Wanderings on the Seas and Shores of Africa. Savannah: 8vo. [With some ethnographical remarks on the Berbers.] Quoted by Hodgson, No. 656.

645. 1843–45. **Nobbe, C. F. A.**—Ptolemy, Claudius: Géographie. Edidit C. F. A. Nobbe. Editio stereotypa. Lipsiae: 3 vol., 16mo.

646. 1843–46. **Tornberg, Cav. I.**—Annales regum Mauritaniae a condito Idrisiarum imperio ad annum fugae 726. Upsaliae: 2 vol., 4to.

A translation, with Arabic text, of the Arabic work **Rudh el-Kartas** by Bin Abd-el-Halim. Noticed by M. Quatremère in the 'Journ. des Sav.' 1847. See Nos. 26, 465, 554, 871, 1523.

647. 1843–1871. **Slane, Bn. MacGuckin de**—كتاب وفيات الاعيان Ibn Khallikan's Biographical Dictionary, translated from the Arabic. Paris: 4 vols., 4to, xl. + 688; xvi. + 697; 699; xliv. + 616.

Printed for the Oriental Translation Fund of Great Britain. There is a life of Ibn Khallikan in vol. iv.

The Arab text was published by Wüstenfeld, at Göttingen, in 1835–42: وفيات الاعيان: Vitæ Illustrium Virorum, nunc primum *Arabice* edidit, variis lectionibus indicibusque instruxit **F. Wüstenfeld**, cum additamentis. Fasc. 1–6 and 8–11, with 2 Collect. Additament.: and another in Bulak, 2 vols., 4to, in A.H. 1299. See an article on the work of De Slane in the 'Rev. des deux Mondes,' 15 Sept. 1842. See No. 21.

648. 1843. **Caussin de Perceval, A. P.**—Grammaire Arabe vulgaire pour les dialectes d'Orient et de Barbarie. Paris (3rd edition): 8vo, pp. xi. 172 + 8 of Arabic (The Adventure of Hakem).

649. 1843. **Marcel, I.**—Monnaies diverses ayant cours en Algérie, tant celles de l'ancienne régence que de Tunis, Tripoli, Maroc, etc., avec texte descriptif des formes; analytique des écritures, signes et dates de leurs faces et revers; historique de leur origine; indicatif de leur valeur normale et intrinsèque comparée avec les monnaies de France. Paris: folio, pp. 18, with a view of the place in which the treasure of the Kasbah at Algiers was situated.

650. 1844. **Hay, J. H. Drummond,** afterwards **Sir John H.**—Western Barbary; its wild tribes and savage animals. London: 8vo, pp. 177.

The journey which forms the groundwork of this volume was undertaken for the purpose of procuring for Her Majesty a barb of the purest breed from the region round Laraish; a mission in which he failed. In the appendix he gives an account of the travels and murder of John Davidson in 1835.

It is full of picturesque information on Morocco and its Nomads.

651. ——— A French translation of the last by Mme. Louise Sw. Belloc, entitled 'Le Maroc et ses tribus nomades. Excursion dans l'intérieur, chasses, détails de mœurs, superstitions, coutumes, etc.' Paris: 8vo, pp. xxxii. and 351.

652. ——— A German translation: 'Marokko und seine Nomadenstämme.' 4 Theile. Stutgardt: 1846.

653. 1844–45. **France, Spain and Morocco.** (Two articles.) Monthly Review (London), vol. 164, p. 583.

654. 1844. **Morocco and the Moors.** Review of Drummond Hay's 'Western Barbary.' No. 650. 'Christian Remembrancer' (London), vol. viii., September, pp. 227–238.

655. 1844. **Robertson, Rev. William.**—A Residence at Gibraltar and a visit to the Peninsula in the summer and autumn of 1841. Edinburgh and London: 8vo [no date on title-page], pp. 401.

Chapters x. and xi., pp. 222—265, describe Tetuan and Tangier. The Author, who was minister of New Greyfriars, Edinburgh, visited Gibraltar at the instance of the General Assembly of the Church of Scotland.

656. 1844. **Hodgson, William B.**, late Consul U.S.A. at Tunis.—Notes on Northern Africa, the Sahara and Soudan, in relation to the ethnography, languages, history, political and social condition of the natives of those countries. New York: 8vo, pp. 112.

This contains vocabularies of several dialects of the Berber language. He seems to have supplied Professor Newman with notes. See No. 657.

657. 1844. **Newman, F. W.**—On the Structure of the Berber Language, in **Pritchard's** Researches on the Physical History of Mankind, vol. iv. See also 'Zeitschr. für Kunde des Morgenlands,' Bonn, 1845, t. iv.

658. 1844. **Strabo.**—Strabonis Rerum Geographicarum Libri xvii. Gr. et Lat. Oxonii: 2 vol., folio.

An English edition of Strabo was published by H. G. Bohn in 1854–7 translated by H. C. Hamilton and W. Falconer. 3 vol., 12mo. See No. 6.

659. 1844. **Brosselard.**—Dictionnaire Français-Berbère: ouvrage composé par l'ordre du Ministre de la Guerre. Paris: 8vo, pp. 656.

This principally relates to the dialect spoken in the Kabylia of Bougie, but is valuable to the student of the Berber language in general.

660. 1844. **Paradis, Venture de.**—Grammaire et Dictionnaire abrégés de la langue berbère; revue par P. A. Jaubert. Paris: 4to, p. 236.

At the end of the dictionary are some pretended Itineraries in Morocco, collected in 1788 from the papers of Raynal in the Bib. Nat. of Paris.

661. 1844. **Lapie, Colonel Pierre.**—Recueil des itinéraires anciens, comprenant l'Itinéraire d'Antonin, le table de Peutinger et un choix des Périples Grecs. Avec dix cartes dressés par . . . . Publié par **M. le Mis. de Fortia d'Urban,** Membre de l'Institut. Paris: 4to, pp. xix. and 558.

A work which, though now superseded by the Researches of Tissot, was of value at the time it was written.

662. 1844. **Itinéraire** de Tanger à Maroc (d'après le Bulletin de la Société de Géographie) par **M. Washington,** officier de la marine royale britannique, un des membres de la Mission Anglaise envoyée à Maroc en 1829. 'Spectateur Militaire,' vol. xxxvii., p. 691 (avec la carte et le plan de Maroc). No. 567.

663. 1844. **Commerce du Maroc.** L'Algérie, 12 et 16 août.

664. 1844. **Notice sur Tanger.** l. c., 6 août.

665. 1844. **Galibert, Léon.**—Histoire de l'Algérie ancienne et moderne, depuis les premiers établissements des Carthaginois, etc. Paris: 8vo, pp. 636, a map and many illustrations, some coloured.

Nothing about Morocco except in the first chapter, describing the features of the Atlas region, &c. See also No. 818.

666. 1844. **Le Maroc.** L'Illustration, March—August, pp. 183, 341, 359, 375, 401, 417.

Gives an account of the Prince de Joinville's operations, and the bombardment of Tangier.

667. 1844. **Caraman, Adolphe,** Duc de, Lieut. au Corps Royal d'État Major.—Notes Militaires sur la partie du Maroc parcourue pendant les mois d'avril, mai et juin 1825. 'Spectateur Militaire,' vol. xxxvii. (15th August),

p. 525, with views of Tangier and New Fez, a map of the empire of Morocco, and a military reconnaissance of the route from Tangier to Fez.

668. 1844. **Rey.**—Souvenirs d'un Voyage au Maroc. Paris: 8vo, pp. 176. (Printed in Algiers.)

The author resided many years in Tangier, and made a voyage along the coast in a French brig. The narrative contains numerous anecdotes of renegades, and "His account of the country," Mr. James Richardson (No. 872) writes, "discovers talent and intelligence, but is, of course, coloured with a strong anti-English feeling. Mr. [afterwards Sir John D.] Hay wrote on the back of his Mémoire, 'All that is said in reference to Great Britain is false and malicious.' M. Rey's opinions of the Moors and the present governors are still more bitter and unjust." (1859.)

669. 1844. **Didier, Charles.**—Promenade au Maroc. Paris: 8vo, pp. 362.

The author visited Tangier and Tetuan; his observations do not show much knowledge of the country, and the value of the work is further decreased by the absence of index and table of contents. It is a reprint of his papers in the 'Rev. des deux Mondes' (No. 593). The author was born in Geneva in 1805, and died at Paris in 1869.

670. 1844. **Durieu, Xavier.**—Le Maroc en 1844. 'Rev. des deux Mondes,' October. See also No. 756.

671. 1844. **Paillet, H.**—Histoire de l'Empire de Maroc, accompagnée d'une carte du Maroc et de l'Algérie. Paris: 16mo, pp. 108.

A mere compilation, of no value.

672. 1844. **Tableau** de la guerre des Français dans l'Empire de Maroc, avec les détails de toutes opérations de l'armée de terre et de mer: précédé d'une notice historique sur cette partie de la Barbarie, sur les souverains anciens et modernes, sur la religion et les mœurs de ses habitants: orné des gravures représentant le bombardment de Tanger, le plan de bataille d'Isly, le choc des cavaliers arabes contre les carrés français et la prise de Mogador. Paris: 16mo, pp. 108.

673. 1844. **Convention** entre la France et Maroc, pour régler les différends survenus entre ces deux États, conclue à Tanger le 10 Septre. 1844. No notice of the ratification of this treaty. Martens, Recueil de Traités, t. v. p. 418.

674. 1844. **Carpentier, Napoléon.**—Tanger et Mogador. Poëme. Paris: 12mo, avec portrait, pp. 72.

675. 1844. **Conailhac, Jean Joseph Louis.**—Les jolies filles du Maroc. Pièce en 3 actes, mêlée de couplets. Paris: 8vo. [A Play.]

676. 1844. **Breve Noticia** del imperio de Marruecos. Artículo inserto en el Memorial de Artilleria. (Duro.)

677. 1844. **Acta de la ejecución** y cumplimiento del Articulo 1° del Convenio con Marruecos de 23 Agosto 1844, sobre limites de Ceuta, fecha 7 de Octubre del mismo año. Colec. Janer. (Duro.)

678. 1844. **Estévanez Calderón, Serafín.**—Manual del oficial en Marruecos ó cuadro geográfico-estadístio-histórico-político y Militar de aquel Imperio por . . . Auditor General de Ejército. Madrid: 4to, pp. 342, with a map of Morocco.

679. 1844. **Mordtmann, A. D.**—Kurze Beschreibung von Magrib el Aksva oder Schilderung der Staaten von Marokko in geographischer, statistischer und politischer Hinsicht. Hamburg: 8vo, with map.

680. 1844. **Pelissier, E.**—Mémoires historiques et géographiques sur l'Algérie. Exploration scientifique de l'Algérie, pendant les années 1840, 1841, 1842, publiée par ordre du Gouvernement et avec le concours d'une Commission Académique. 'Sciences historiques et géographiques,' Paris, 4to, vol. vi., pp. 440.

The expeditions and establishments of the Spaniards in Morocco are described on pp. 10, 11, 99, 112, &c. The expeditions and establishments of the Portuguese in the Empire of Morocco are the themes of pp. 121–171. The affairs of Morocco are discussed on pp. 253–4; the English at Tangier on p. 261; and the French establishments in Morocco on pp. 285–288.

681. 1845. **Mas Latrie, L. le Comte de.**—Aperçu des relations commerciales de l'Italie avec l'Afrique septentrionale au moyen-âge. Paris: fol., pp. 32.

682. 1845. **Nève,** Professor at the University of Louvain.—Relation d'un voyageur chrétien sur la ville de Fez et ses écoles dans la première moitié du xviie siècle. Gand: 8vo, pp. 20.

A translation of the letters of Clenardus: see No. 48.

683. 1845. **Thomassy, Raymond.**—Le Maroc et ses caravans. Relations de la France avec cet empire. Paris: 8vo, pp. 432.

A previous edition, much less complete, was published in 1842, and a subsequent one in 1859.

The great value of this work is the minute account it gives of French relations with Morocco from the earliest ages until the accession of Mowlai Abder-Rahman in 1822.

684. 1845. **Duprat, Pierre Pascal.**—Essai historique sur les races anciennes et modernes de l'Afrique septentrionale, leurs origines, leurs mouvements et leurs transformations depuis l'antiquité la plus reculée jusqu'à nos jours. Paris: 8vo, pp. 308.

A valuable work for the time at which it was written.

685. 1845. **Mauroy, M.**—Du Commerce des peuples de l'Afrique septentrionale dans l'antiquité, le moyen-âge et les temps modernes, comparé au commerce des Arabes de nos jours. Ouvrage faisant suite à la 'Question d'Alger en 1844.' Paris: 8vo, pp. 190.

A 4th edition was published in 1852: 'Précis de l'histoire et du commerce de l'Afrique septentrionale depuis les temps anciens jusqu'aux temps modernes par . . . Précédé de deux lettres du Duc d'Isly (Maréchal Bugeaud) sur la question d'Alger . . . corrigée et refondue.' Paris: 8vo, pp. xx. + 451.

This contains little information regarding Morocco.

686. 1845. **Documents authentiques** rédigés sur le champ de bataille d'Isly. Enlèvement du camp impérial maroccain. Rapports, etc., à M. le Colonel Jusuf et au Colonel Tartas. Marseille: 8vo, pp. 16.

687. 1845. **Pelet, Général J. J.,** Pair de France.—Maroc, Alger, Tunis, avec une carte de l'Algérie dressée au Dépôt de la Guerre. Magdebourg.

688. 1845. **Bugeaud, Le Maréchal.**—Guerre d'Afrique, campagne de 1844. Bataille d'Isly. 'Rev. des deux Mondes,' 1st March.

689. 1845. **Christian P.** (pseudonym of *Pitois*), ancien Secrétaire particulier du Maréchal.—Souvenirs du Maréchal Bugeaud, de l'Algérie et du Maroc. Paris: 2 vol. 8vo, pp. 349 and 358. The same work was used in 1847, under the new title of 'La Nouvelle France: Souvenirs de l'Algérie et du Maroc.'

Chap. xx. vol. ii., "Bugeaud et les Marocaines," treats of the events on the French frontier and the bombardment of Tangier; a work of little value.

A Dutch translation (abridged) was published in 1848, with the following title: 'Herinneringen aan Mijn Krijgsmansleven in Algiers en Marokko.' (With portrait of Marshal Bugeaud, "Hertog van Islij.") Haarlem: 8vo.

690. 1845. **Christian, P.** (pseudonym of *Pilois*), ancien Secrétaire particulier du Maréchal.—Question d'Afrique, le Maroc et la Politique Anglaise. Paris: 8vo.

691. ——— L'Afrique française: l'empire de Maroc et les déserts de Sahara. Histoire nationale des conquêtes et nouvelles découvertes des Français depuis la prise d'Alger jusqu'à nos jours. Paris: 8vo, pp. 500, with map and illustrations by Philippoteaux, T. Johannot, E. Bellangé-Isabey, &c.

Liv. v., p. 269: "Tableau de l'Empire de Maroc."

Liv. viii. contains an account of the operations on the frontier of Morocco and of the naval expedition to Tangier.

692. 1845. **Traité** de délimitation entre la France et l'empire de Maroc, conclu et signé en Afrique sur le territoire d'Algérie, le 8 Mars, 1845. Ratification exchanged at Tangier, 6th August. Signed by General de la Rice and Ahmida ben Ali. Martens, Nouv. Rec. de Traités, t. viii. p. 143.

693. 1845. **Traité** conclu le 6° Mai entre l'Espagne et le Maroc. (Gaz. de Mad., 30 Mai, 1845; Martens, Nouv. Rec. de Traités, t. viii. p. 206.) Signed by Antonio de Beramendi, Bulhilam Ben Ali, and J. H. Drummond Hay.

694. 1845. **Convenio** entre España y Marruecos, firmado en Larache á 6 de Mayo de 1845, conteniendo varias aclaraciones al de 25 de Agosto de 1844. Colec. Janer.

An extract in Martens, 'Rec. de Traités,' t. v. p. 418.

695. 1845. **Lopes da Costa Almeida, Antonio.**—Roteiro dos Mares Costas, &c. reconhecidos no globo. Lisbon. (De la Martinière.)

696. 1845. **Augustin, Freiherr von.**—Marokko in seinen geographischen, historischen, religiosen, politischen, militärischen und gesellschaftlichen Zuständen. Nach eigener Anschauung geschildert. Mit Muley Abd-er-Rhaman's Bildniss, der Ansicht von Tanger und von Mequinez. Pest: 8vo.

697. 1845. **London, Frederike H.**—Die Barberei. Eine Darstellung der religiösen und bürgerlichen Sitten und Gebräuche der Bewohner Nord-Afrika's, Frei und englischen Quellen bearbeitet und auf eigen Beobachtungen gegründet von .... Frankfurt a. M. und London: 8vo, pp. 230.

This little work, published by subscriptions—nearly all from England—is a compilation from various unacknowledged sources. It describes the three Barbary States, but has least of all about Morocco; Tunis receives most attention.

698. 1846–63. **Dozy, R. P. A.**—Scriptorum Arabum loci de Abbadidis primum editi Arab. et Latine cum notis. Lug. Bat.: 3 vols. 4to.

In this work, among other writings, an account is given (vol. ii. p. 182 *et seq.*) of a manuscript History of Morocco, "Holal No. 24," in the Leyden University Library. It also contains an assemblage of selections from unpublished Arabic writers, and numerous poems from the works of the Spanish Arabs,—"the children of song," as Mutanabbi named them.

699. 1846–50. **Christian, P.**—Histoire des pirates et corsaires de l'océan et de la Méditerranée, depuis leur origine jusqu'à nos jours. Paris: 4 vols. 8vo.

700. 1846. **Leynadier et Clausel.**—Histoire de l'Algérie, avec un précis sur le Maroc. Paris: 2 vol. 8vo. (De la Martinière.)

701. 1846. **Rousseau des Roches, J.** — Trois souvenirs — Tanger, Isly, Mogador. Paris: 8vo, pp. 24.

702. 1846. **Thomassy, Raymond.**—La question d'Orient sous Louis XIV. Paris: 16mo, pp. 102.

Gives an account of the Embassy from Morocco to Versailles under Ben Aïssa in 1698. See Nos. 317, 318.

703. 1846. **Réception de l'Ambassadeur de Maroc.** Rev. de l'Orient, Paris, t. xix., p. 92.

An account of the reception of Sid Abd-el-Kader Oshash, Ambassador of the Sultan to France, by King Louis Philippe.

704. 1846. **Bled de Braine, J. F.**—Cours synthétique, analytique et pratique de la langue arabe, arrangé à l'usage des Collèges et des Écoles, ou les dialectes vulgaires africains d'Alger, de Maroc, de Tunis et de l'Égypte, etc. Paris: 8vo, pp. xxii. 556.

705. 1846. **Voyage de l'Imam El-'Aïachi** depuis le pays des Aït-'Aïach, dans le Maroc, jusqu'à Tripoli et retour. De la fin de Reb'i-el-Oouel 1073 (fin d'Octobre 1662) au 18 Chaouâl 1074 (5 Mai 1663). Translated from a MS. in the Bib. d'Alger, by A. Berbrugger. Rev. Scient. de l'Algérie, t. ix., pp. 1–164.

706. 1846. **Renou, Émilien.** — Description géographique de l'Empire de Maroc, par .... Membre de la Commission Scientifique de l'Algérie. Suivie d'Itinéraires et renseignements sur le pays de Sous, et autres parties méridionales du Maroc, recueillis par **M. Adrien Berbrugger.** Paris: 8vo, pp. viii. 480.

This painstaking work forms vol. viii. of the 'Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842, publiée par ordre du Gouvernement, et avec le concours d'une commission académique—Sciences, historiques et géographiques.'

Pp. 425–428 contain a Bibliography of Morocco, arranged chronologically, of works, views, plans and charts. Of the first, 264 are quoted, not very accurately. Pp. 447, 448 contain seven articles, principally relating to the Spanish *Presidios.* The number of plans and views quoted is 151.

At p. 459 is the French treaty of the 18th March, 1845 [No. 692], containing the delimitation between Algeria and Morocco. The portion contributed by M. Berbrugger is from pp. 465 to 473.

707. 1846. **Kelaart, E. F., Dr.**—Flora Calpensis: Contributions to the Botany and Topography of Gibraltar and its neighbourhood. With plan and views of the Rock. London: 8vo, pp. 220.

This volume, as its title intimates, is essentially an account of the plants of Gibraltar; but in addition there are throughout notes on those of the opposite coast of Africa, so far as their range is concerned.

708. 1846. **Féliú de la Peña, Francisco.** — Leyenda histórico-político-militar-administrativa-religiosa del Peñón de Velez de la Gomera, con noticia de las expediciones españolas contra la Costa de África, y memoria sobre la conservación ó abandono de los presidios menores. Valencia: 8vo, pp. 158, with a view of Peñón. (Duro.)

709. 1846. **Löwenstein, Wilhelm zu, Prinz.**—Ausflug von Lissabon nach Andalusien u. in den Norden von Marokko im Frühjahr 1845. Mit einen Ansicht von Sevilla. Dresden, Leipzig: 8vo, pp. 274.

Of little value—mere tourists' impressions.

710. 1846. **Richard, M.**—Études sur l'insurrection du Dahra. Algiers: 8vo.

711. 1847. **Alby, Ernest.**—Histoire des Prisonniers français en Afrique depuis la Conquête. Paris: 2 vol. 8vo, pp. viii. 332 and 384.

This professes to give a true account of the captivity of sundry Algerian colonists and soldiers with Abd-el-Kader and in Morocco; particularly of the family Lanternier, of which a daughter married the eldest son of the Sultan. It also narrates the disastrous affair of Sidi Brahim and the massacre of 255 French prisoners within the frontier of Morocco.

712. 1847. **Dozy, Dr. R. P. A.**—The History of the Almohades, preceded by a sketch of the History of Spain from the times of the Conquest till the reign of Yusof ibn-Táshfín, and the History of the Almoravides, by **Abdo-'l-Wáhid Al-Marrékoshi,** now first edited from a MS. in the Library of Leyden, the only one extant in Europe. Leyden: printed for the London Society for the Publication of Oriental Texts. 8vo, pp. xxii.+٢٩. 2nd ed. 1881.

This work is entitled: كتاب المعجب في تلخيص اخبار المغرب.

The author made several journeys from Merakish to Fez and *vice versâ*, and he visited Sus, Sijalmissa, and other provinces of the empire of the Almohades. See No. 19. A fragment of this work was published by Rink at Leipzig in 1802.

A French translation by **E. Fanan,** published in the Rev. Afr. t. xxx. =v. for 1891, p. 267 *et seq.*—badly done, No. 2057.

713. 1847. **Sacy, A. I. de,**—Catalogue des livres composant la Bibliothèque de M. le baron Silvestre de Sacy. Livres et manuscrits arabes. Paris: 3 forts vol. 8vo.

It contains notices of many books and manuscripts relating to Morocco.

714. 1848. **Hay, Sir John Drummond.**—Journal of an Embassy to the Court of Morocco in 1846. Cambridge (privately printed): 8vo, pp. 108.

715. 1848. **Account of the Slavery of Friends** in the Barbary States towards the close of the seventeenth century, with some particulars of the exertion of their brethren at home for their redemption. London: 8vo, pp. 24.

Numerous accounts are given of captives in various parts of Morocco between 1685 and 1702.

716. 1848. **Newman, F. W.**—The Narrative of Sidí Ibrahim ben Muhammed el Messi el Súsi in the Berber Language, with interlineary version and illustrative notes. Journ. Roy. As. Soc. vol. xix. pp. 215–266.

A short account of this narrative was given in vol. iv. p. 115, and was followed by an English translation by Mr. Hodgson from an Arabic version.

717. 1848. **Montgravier, Aséma de,** Chef d'escadron d'Artillerie.—Mémoire sur l'occupation de la Mauretanie par les Romains. Paris: 8vo.

This work received the first gold medal at the competition of the Académie des Inscriptions in 1848. Partly on Morocco.

718. 1848. **Hoefer, Dr. Ferd.**—Afrique Australe, Afrique Orientale, Afrique Centrale, Empire du Maroc. Paris: 8vo, pp. 497, with a map of Africa and 18 illustrations, of which the first six refer to Morocco.

The portion of the text devoted to this country is from p. 257 to p. 391. The volume forms one of the series styled 'L'Univers: Histoire et description de tous les peuples.'

719. 1848–1851. **Dozy, Dr. R. P. A.**—

البيان المغرب في اخبار المغرب لابن عذاري المراكشي. Histoire de l'Afrique et de l'Espagne intitulée Al-Bayano'l-Mogrib par Ibn-Adhárí (de Maroc), et Fragments de la Chronique d'Arib (de Cordoue): le tout publié pour la première fois, précédé d'une introduction et accompagnée de notes et d'un glossaire. Leyde: 2 vol. 8vo, pp. 119+٣٣٨ : 48+٣٢١. See also Dozy's 'Corrections sur les textes du Bayáno'l-Mogrib d'Ibn-Adhari (de Maroc), des fragments de la chronique d'Arib (de Cordoue) et du Hollato's Siyará d'Ibn ól l Abbár.' Leyde: 1883. 8vo. See No. 30.

The Chronicle of Arib was written at Cordova in the 10th cent.; that of Adhari at Morocco in the 13th: both treat of the history of North Africa and Spain.

720. 1848. **Reinaud,** Membre de l'Institut de France.—Géographie d'Aboulféda, traduite de l'Arabe en français et accompagnée de notes et d'éclaircissements. Paris: 4to, 2 vol. Vol. i. pp. cdlxiv. Introduction générale à la Géographie des Orientaux; avec trois planches. Vol. ii. part 1, pp. vi. 327 contains the first half of the translation of the text. The second part, published in 1883 with the collaboration of M. Stanislas Guyard, pp. viii. 320, contains the remainder, and a general index. In vol. i. there is a notice of Abou'l Féda and of the Arab authors anterior to him. In vol. ii. chap. iii. is devoted to the Maghreb. See also Nos. 25, 428, 613, 623.

Of this work, only the first volume (Introduction générale à la géographie des Orientaux) is by Reinaud, who died soon after its publication. In 'Busching's Magazin,' vol. iv. and v. (1770 and 1771), Reiske had already given some Latin Translations prepared as early as 1746.

721. 1848. **Charrière, E.**—Négociations de la France dans le Lévant, ou correspondances, mémoires et actes diplomatiques des ambassadeurs de France à Constantinople et des ambassadeurs envoyés ou résidents à divers titres à Venise, Raguse, Rome, Malte et Jérusalem, en Turquie, Perse, Géorgie, Crimée, Syrie, Égypte, etc., et dans les États de Tunis, d'Alger et de Maroc. Paris: 3 vol. 4to.

722. 1848. **Antoninus, Augustus.**—Itinerarium Antonini Augusti. Ed. G. Parthey et M. Pinder. Berolini: 8vo. See Nos. 11, 71.

723. 1849. **Barth, Heinrich, Dr.**—Wanderungen durch die Küstenländer des Mittelmeeres, ausgeführt in den Jahren 1845, 1846, und 1847. (With a map.) Berlin: 2 vol. 8vo.

Vol. i., pp. 1–45, treats of Morocco.

724. 1849. **Descamp, Alex.**—Le Maroc en face de l'Europe, à-propos de la dernière rupture survenue entre la République française et le Gouvernement Marocain. Paris: 8vo. (Pamphlet.)

725. 1850. **Urquhart, David.**—The Pillars of Hercules: a narrative of travels in Spain and Morocco in 1848. London: 2 vol. 8vo, pp. 460+464.

Mr. Urquhart, a Member of Parliament once noted for his extreme anti-Russian views, did not go further than Casablanca. But his book contains a great deal of suggestive matter, including some views still very hypothetical and at the time considered absurd, regarding the connection of the Celts with the Berbers. However, now that the Iberian theory recognises the Berbers as most probably the stock of Great Britain, France and Spain, prior to the Celtic invasion, his ideas are worthy of some attention, more especially as he

had no notion of any such relationship. If this was the case, it is scarcely improbable to hold that the Celts have inherited some Berber words and implements, such as the peculiar brooch used in the Highlands of Scotland, and all over Northern Africa among the Berber people.

726. 1850. **Power, W. Tyrone.**—Recollections of a Three Years' Residence in China, including peregrinations in Spain, Morocco, &c. London: 8vo.

Chapters ii. to iv. inclusive (pp. 12 to 43) touch on Morocco; Tangier and Tetuan particularly.

727. 1850. **Mayo, William Starbuck, M.D.**—The Berber, or the Mountaineer of the Atlas. A tale of Morocco. London: 8vo, pp. 284.

The Author states that his object has been to tell an agreeable story in an agreeable way, and that the historical incidents are well authenticated. The work, which has been several times reprinted, is dedicated to W. B. Hodgson, Esq.

728. 1850. **Masade, Charles de.**—La Guerre du Maroc avec l'Espagne. Rev. des deux Mondes, 1er Janvier—15e Septembre.

"Article attribué au Prince de Joinville." (Godard.)

729. 1850. **Panet, Léopold.**—Relation d'un Voyage du Sénégal à Soueira. (Mogador.) Rev. Colon., Nov. and Dec. 1850, with map. Also printed separately: Paris, 1851, 8vo.

730. 1851. **Sleigh, Adderly W.**, Captain (late R.N.).—Preliminary Treatise on the Resources of Ancient Mauritania, or the territory of the Western Zahara, Suz . . . describing its rich productions, healthful climate, fertile soil, valuable mines, commercial advantages, inhabitants—their ancient descent, laws, manners, habits, form of government and independence. With observations on the introduction of Christianity, the promotion of civilization, and the suppression of Slavery. London: 8vo, 2 parts (the second is separately paged), pp. 87 + 39.

The Author of this work describes from personal knowledge the coasts of Sus, where he seems to have been engaged as a naval surveyor. The second part is the prospectus of a company to colonise this country.

731. 1851. **Akerman, John Yonge**, Secretary of the Society of Antiquaries.—Moneys received and paid for Secret Services of Charles II. and James II. from 30 March, 1679, to 25 December, 1688. Edited from a MS. in the possession of William Selby Lowndes, Esq. London: 4to, pp. x. and 240. Printed for the Camden Society.

Contains many entries regarding Tangier: the first is for £60, "To Mary Heathley, whose husband blew up Whitbey Fort at Tangier and lost his life there."

732. 1851. **Viardot, Louis.**—Histoire des Arabes et des Mores d'Espagne, traitant de la constitution du Peuple Arabe-Espagnol, de sa civilisation, de ses mœurs, et de son influence sur la civilisation moderne. Paris: 2 vol., pp. ix. and 420; iv. and 458.

733. 1851. **Women in Morocco.** (A translation from the French.) Hogg's Instructor, London, pp. 382–4.

734. 1851. **Le Cheykh Mohammed Ibn-Omar el Tounsy.**—Voyage au Ouaday par . . . . : traduit de l'arabe par le Dr. Perron, Directeur de l'École de Médecine du Kaire, ouvrage accompagné de cartes et de planches et du portrait du Cheykh, publié par le Dr. Perron et M. Jomard. Ouvrage précédé d'une Préface de ce dernier, contenant de remarques historiques et géographiques et

passant en suite au voyage au Dârfour. Paris: 2 vols. 8vo. Vol. i. (text), pp. lxxv. 756. Vol. ii., plates and maps.

Contains much indirect information bearing on Morocco.

735. 1851. **Marques de Prado, José.**—Recuerdos de África ó apuntes para formar la historia general de las posesiones españolas del África Mediterránea, que comprenden las plazas de Ceuta, Melilla, Peñon de la Gomera ó islas Chafarinas. Madrid: 4to. (Duro.)

736. 1851. **Kreuger.**—Sveriges Förhållanden till Barbaresk Statern África, etc. Stockholm: 8vo.

737. 1852. **Boisner, Edmund, et Reuter, G. F.**—Africæ borealis Hispaniæque australis, auctoribus. . . . . Genevæ: 1852, 8vo, pp. 134.

In this work a number of Morocco and Algerian plants are described.

738. 1852–56. **Khaldun, Abu Zeid Abd-er-Rahman Ibn-Mohammed Ibn.**—Histoire des Berbères et des Dynasties Muslemanes de l'Afrique septentrionale. Traduction française par le **Baron MacGuckin de Slane.** Algiers: 4 vols., pp. cvi. + 480; 635; 528; 612. Nos. 29, 632, 789, 999.

The original work is a general history of the Mohammedan world, and is unsurpassed in Arabic literature as a masterpiece of historical composition.

At vol. i. p. 301 of De Slane's work are collected some of the most ancient Arab traditions regarding the first invasion of Africa by the Mohammedans, from a history of the conquest of Egypt by **Abd-er-Rahman ibn el-Hakim.**

Appendix i. vol. i. gives extracts from Ibn **Abd-el-Hakim,** containing an account of Okba bin-Nafa's expedition to the Moghreb. App. ii. vol. i. and app. i. vol. ii. contain some chapters from the great work of **En-Noweiri.** App. ii. vol. ii. is a history of the Fatemides from the Prolégomènes of **Ibn Khaldun.** App. iii. vol. ii. is a history of the Beni Hamdun, contemporary with the Fatemides. App. iv. vol. ii. is on the rise and fall of the Idricides, all from **Ibn Khaldun.** App. v. vol. ii. contains extracts from the historical work of **Ibn el-Athir,** in which is an account of the conquest of Morocco by Abd-el-Momen (1146–47).

Vol. iv. is especially dedicated to the history of the Beni Merin, and in the appendix is an article on the language, literature and origin of the Berbers.

An Arabic edition of this work was published at Bulak, A.H. 1284 (A.D. 1867), 7 vol. roy. 8vo, entitled 'Kitabu'l ibr wa Diwan ul-Mubtida' (see No. 999); and his Prolégomènes by M. Quatremere, in the original Arabic, appeared in the 'Not. et Extraits des MSS. de la Bib. Imp. 1858,' t. xvi., xvii.

739. 1852. **Ibn-Abd' el-Djelil et-Tenessi.** See Barges, No. 1798.

740. 1852. **En-Noweiri.** — Conquête de l'Afrique Septentrionale par les Musulmans, et histoire de ce Pays sous les Emirs Arabes.

Extracts from the great encyclopædic work of En-Noweiri form appendices to vols. i. and ii. of De Slane's 'Ibn Khaldoun' (see No. 738); also 'Historiae Ommiadarum qui in Hispaniâ regnarunt,' MS. Bib. Nat. Paris, No. 645. The MS. of the former work is numbered 702.

741. 1852. **Calle, Antonio.**—El Martirio de la jóven Hachuel, o la Heroina hebrea, drama de . . . . Sevilla: 8vo.

A Play founded on the case of Sol Hachuel, daughter of Haïm and Simha Hachuel. (No. 596.)

742. 1852. **Ibn Batutah.**—Voyage à travers l'Afrique septentrionale au commencement du xive. siècle, publié par M. Cherbonneau. Paris: 8vo. Nos. 28, 556, 616, 752.

743. 1852. **Sarrus, F.**—Description d'un astrolabe construit à Maroc en 1208. Strasbourg: 1852, 4to, 6 pl. See No. 575.

744. 1852. **Jourdan, L.**—L'Empire de Maroc. Paris: 8vo.

745. ——— État de Maroc en 1852. Rev. Orient. i. p. 199.

746. 1852. **Carstensen.**—Verzeichniss der in der Umgegend von Tanger und im nordlichen Fez vorkommenden Vögel. Naumannia: 1852, p. 76.

A very imperfect list of birds, chiefly from the neighbourhood of Tangier, by the late British Vice-Consul in Mogador.

747. 1853. **Noé, M. de.**—Sur l'Argania comme plante oléagineuse. (Revue Horticole, p. 125.) Paris: 8vo. Also separately.

748. 1853. **Sumner, Hon. Charles.**—White Slavery in the Barbary States. London: 8vo, pp. 135. See also 'Quarterly Review,' vol. xcix. p. 331.

749. 1853. **Carette, E.**—Recherches sur l'Origine et les Migrations des principales tribus d'Afrique septentrionale. Paris: 8vo, pp. 476.

This refers to Morocco as well as to the other countries of North Africa. A very learned and valuable work.

750. 1853. **Alby, Ernest.**—Les Vêpres Marocaines, ou derniers prisonniers d'Abd-el-Kader. Paris: 2 vol. 8vo.

The author writes under the pseudonym of **A. de France.**

751. 1853. **Mirval, J. B. J. de.**—L'Orphelin de Mogador, ou notions sur l'empire du Maroc. Limoges: 18mo, with illustrations. (De la Martinière.)

752. 1853–1858. **Ibn Batutah,** Voyages d'. Texte arabe, accompagné d'une traduction par **C. Defrémery** et le **Dr. B. R. Sanguinetti.** Paris: 4 vol. 8vo, published by the Société Asiatique: pp. xlvi. + 448; xiv. + 460; xxvi. + 473; 479 + 81.

This celebrated traveller, Abu Abdulla Mohammed, left his native city Tangier with the view of performing the pilgrimage to Mecca; he actually traversed a great part of the Mohammedan world between 1325 and 1349. On his return he visited Merakish, Fez, Ceuta, Salee, and various other places in Morocco. The original title of the work is,

تحفة النظّار في غرائب الامصار و عجائب الاسفار.

See Nos. 28, 556, 616, 752, and an article by the late Sir Henry Yule in 'Encycl. Brit.,' 9th edition, vol. xii., pp. 607–609.

The complete MSS. from which MM. Defrémery and Sanguinetti's edition was prepared, were found in Constantine on the capture of that city by the French. One of them was in the autograph of Ibn Juzai. The chief MSS. in English Libraries are those in abridgment presented by Burckhardt to Cambridge. From these Dr. Lee's version was prepared. Another, apparently unknown to the editors of the above edition, dating from the eighteenth century, is in the collection of Dr. R. Brown, who obtained it from the Library of Amédée Jaubert: رحلة محمد بن بطوطه: Travels of Mohammad ibn Batuta el-Mughrabi. Its origin is not known.

753. 1853? **Joinville.**—Histoire Générale de la Marine (édition publiée sous la direction de M. Van Tenac). Paris: 4 vol. 8vo. Bataille de Tanger (1578). T. ii. p. 89. Prise de Mogador. Bombardement de Tanger (1844). T. iv. pp. 324–42.

754. 1854. **Smyth, William Henry,** Rear-Admiral.—The Mediterranean: A Memoir, Physical, Historical, and Nautical. London: 8vo, pp. 519.

Pp. 95–6, 99, 301–2, and 404 refer to Morocco.

755. 1854. **Hooker, Sir William J.**—The Argan tree of Morocco. (Mainly consisting of a letter from Mr. Wm. Grace, British Vice-Consul in Mogador.) 'London Journal of Botany,' vol. vi. p. 97, tab. iii., iv. Reprinted in Appendix to Hooker and Ball's 'Tour in Morocco,' pp. 396–403. See also Retz, 'Observ. Botanicæ,' vol. iv. p. 26, and Corrêa de Serra, 'Annales du Mus. d'Hist. Naturelle,' 1809, t. viii. p. 393, tab. v. fig. 1.

756. 1854. **Durrieu, Xavier.**—The present State of Morocco. A chapter of Mussulman Civilisation. London: 8vo, pp. 93, forming vol. 60 of 'The Traveller's Library.'

This is merely an English version of the Author's article in the 'Rev. des deux Mondes,' No. 670.

757. 1854. **Cherbonneau.**—Notice et extraits du Voyage d'El-Abdery à travers l'Afrique Septentrionale, au viiᵉ. Siècle de l'Hégire. رحلة العبدري. Paris: 8vo, pp. 35. Reprinted from the 'Journ. Asiatique.' See No. 23.

758. 1854. **Bard, Joseph.**—L'Algérie en 1854. Itinéraire général de Tunis à Tanger; colonisation, paysages, monuments, culte, agriculture, statistique, hygiène, industrie, commerce, avenir. Paris: 8vo, pp. 251, 1 plate (the tower of the Great Mosque at Oran).

759. 1855. **Riudavets, Pedro.**—Descripción y plano de las islas Chafarinas. Crónica Naval, Madrid, t. i., p. 662.

This important work advocates the transfer of the Presidios of Peñon, in order to create a great military port at the Zaffarine islands.

760. 1856. **General Treaty between Great Britain and Morocco,** signed at Tangier, 9th December, negociated by John Hay Drummond Hay, Esq., C.B., H.M. Chargé d'Affaires. 38 Articles. Hertslet's Treaties, vol. x. p. 903.

761. 1856. **Convention of Commerce and Navigation between Great Britain and Morocco,** of the same date. l. c. p. 915.

762. 1856. **Kunstmann.**—Valentin Ferdinand's Beschreibung der Westküste Afrikas bis zum Senegal. Abhandl. der. Kgl. bayr. Akad. d. Wissenschaften. iii. Kl. viii. Bd. 1 Abtlg.

763. 1856. **Slane, Baron MacGuckin de.**—Conquête du Soudan par les Marocains, l'an 299 (1590–1 de J.-C.). Récit extrait de l'ouvrage d'un historien Arabe. Rev. Afr., t. i. pp. 287–312.

The Prince whose acts are here related was El-Mansur, son of Abd-el-Melek, who died on the occasion of the great battle during which Don Sebastian and his army were destroyed.

764. 1856. **Rizo, Francisco.**—Importancia de la plaza del Peñon y consideraciones sobre la conveniencia de conservar ó abandonar aquel punto. MS. en el Dep. da Ingenieros. (Duro.)

765. 1856. **Reinaud, M.**—Rapport sur le Tableau des dialectes de l'Algérie et des contrées voisines de M. Geslin. Paris: 8vo, pp. 26. (Extracted from the 'Moniteur Universel,' August 7th and 8th, 1856.)

There is a good deal on Morocco in this memoir: M. Geslin's works related entirely to Algeria and the country south of it.

766. 1856. **Vincendon Dumoulin and C. P. de Kerhallet.**—Côte Nord du Maroc. Paris: 8vo. Minist. de la Marine: Instructions nautiques, No. 229.

767. 1857. **Duncan, Vice-Consul.**—Report on the Trade of Larnîch for 1856. Reports received at the Board of Trade through the F. O. for the years 1855–56, p. 132.

768. 1857. **Redman, Cons. Agent.**—General Commercial Report on Mazagan for 1855. l. c., p. 134.

769. 1857. **Grace, Vice-Consul.**—Report on the Trade of Mogador for 1856. l. c., p. 137.

770. 1857. **Elton, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 146.

771. 1857. **Reade, Vice-Consul.**—Commercial Report for the Province of Tangier for 1856. l. c., p. 153.

772. 1857. **Hay, J. D.**, Vice-Consul.—Commercial Report on Tetuan for 1856. l. c., p. 165.

773. 1857. **British Order in Council** for the apprehending and delivering up of Seamen, *deserters* from the Merchant vessels of Morocco and Fez, in British and East Indian Ports. Dated 6th May. Herts. Treat., vol. x. p. 922.

774. 1857. **British Order in Council** for the exercise of power and *jurisdiction by British functionaries* over British Subjects in Morocco. Dated 27th August. Contains 41 Articles. l. c., p. 923.

775. 1857. **Barges, l'Abbé, et Goldberg, M.**—R. Jehuda ben Koreisch Tcharetensis Africani ad synagogam Judæorum civitatis Fez epistola. De studii Targum utilitate et de linguæ chaldaicæ, misnicæ, talmudicæ, arabicæ, vocabulorum, item nonnullorum, barbaricorum convenientia cum hebræa. Paris: 8vo.

These were lectures on Philology delivered in the Fez Synagogue, in the 10th century, by the Rabbi Juda ibn Koreish. The work is translated from a MS. in Oxford.

776. 1857. **Cotte, Narcisse.**—Mœurs politiques et sociales du Maroc. Revue Contemporaine et Athenæum Français (Paris), Livraison 137, Dec. 15th, pp. 1–36.

777. 1857–58. **Barth, Henry.**—Travels and Discoveries in North and Central Africa, being a Journal of an Expedition undertaken under the auspices of H.B.M.'s government in the years 1849–1855. London: 5 vols., 8vo. This valuable work, of which French and German versions have appeared, contains (vol. iv., pp. 610, 614, 623, 696; vol. v., pp. 3, 33) valuable information regarding the relations of Morocco and Timbuktu.

778. 1857. **Godard, l'Abbé Léon.**—Les Évêques de Maroc sous les derniers Almohades et les Beni-Merin. Rev. Afr., vol. ii. p. 124 *et seq.*

A see was created in Fez and Morocco in 1233, and was occupied by Franciscans till the middle of the 15th century. Christians were then numerous in the country, as is proved by the letter of Innocent IV. to the Sultan in 1246.

779. 1857. **Dastugue, Lt.-Col. H.**—La Bataille d'Al-Kazar el-Kebir, d'après deux historiens Musulmans. Rev. Afr., t. xi. p. 130.

The MSS. on which this narrative is based are (1) the Nozhat el-Hadi by Mohammed es-Segheir bin el-Haj bin Abdulla, who lived at Morocco in the 12th century of the Hejira, the title of whose work Colonel Dastugue thus

translates, 'Délices de celui qui s'attache à l'histoire des souverains du onzième siècle, c'est à dire de la dynastie Saadienne.' (2) The commentary of a *Kasida* or piece of verse composed in honour of Bel Mohammed el-Kebir on the surrender of Oran by the Spaniards in 1791, by the Imam Mohammed Abou-Ras bin en-Nasser. The battle in question is styled by the Arab historian that of the Wad el-Mekhazin.

780. 1857. **Slane, Baron MacGuckin de.**—Description de l'Afrique Septentrionale par **Abou-Obeid el-Bekri.** Texte Arabe, revu sur quatre manuscrits et publié sous les auspices de M. le Maréchal Comte Randon, Gouverneur Général de l'Algérie. **Alger**: 8vo, pp. 19, ٢١٢. The Arabic title is

كتاب المغرب في ذكر بلادافريقية والمغرب &c.

In 1859 a French translation was published by the same author at Paris: 8vo, pp. 432. This first appeared in the 'Journ. Asiatique,' 1858–59. See also Nos. 16, 800.

781. 1857. **Snider-Pellegrini, A.**—Quelques observations sur les Moyens de développer le commerce de l'Algérie avec l'intérieur de l'Afrique, et d'une route par terre d'Alger au Sénégal par Tombouctou, précédé d'observations sur l'Algérie et le Maroc. **Paris**: 8vo. See also Bull. Soc. Géogr., Paris, March.

782. 1857. **Marès, Dr. Paul.**—Observations météorologiques recueillis pendant les mois d'octobre, novembre et décembre 1856 et janvier 1857, dans le Sahara, au sud de la province d'Oran, et dans le sud-est du Maroc. **Paris**: fol. pp. 8. From the 'Ann. de la Soc. de Météor. de France,' t. v. p. 172.

783. 1857. **Fournel, Henri.**—Étude sur la conquête de l'Afrique par les Arabes, et recherches sur les tribus Berbères qui ont occupé le Maghreb Central. **Paris**: 4to, pp. 166.

The Author followed up this subject in a much more important work published in 1875–81: *q. v.*

784. 1857. **Dumoulin, C. A. Vincendon,** and **C. P. de Kerhallet.**—Description nautique de la côte nord du Maroc. Instructions nautiques, Ministère de la Marine. **Paris**: 8vo.

785. ——— Manuel de la navigation dans le détroit de Gibraltar. Ministère de la Marine. No. 259. **Paris**: 8vo.

786. 1857. **Kerhallet, Ch. P. de,** Capitaine de Vaisseau.—Manuel de la Navigation à la côte occidentale d'Afrique. **Paris.** See Nos. 844, 1078.

787. 1857. **Cambio di lettere** per l'adesione del Governo Sardo alle misure adotta dal Governo Marocchino per la *repressione del contrabbando* sulle coste di quell' Impero e l'ammessione della Sardegna al Godimento dei vantaggi stipulati col Trattato Inglese Marocchino del 9 dicembre 1856. Raccolta dei Trattati, vol. prelim., Torino, No. cxix. p. 631.

788. 1858. **Elton, W. J.,** Vice-Consul at Mogador.—Coast of Morocco, communicated by Capt. J. Washington, R.N. Proc. R. Geogr. Soc., London, vol. ii. p. 375.

789. 1858. **Quatremere, Et.**—Prolégomènes d'**Ebn Khaldoun**

مقدّمة ابن خلدون. Texte Arabe, publié d'après les Manuscrits de la Bibliothèque Impériale. Notices et extr. des MSS. de la Bib. Imp., t. xvi., xvii. Nos. 29, 632, 738, 999.

790. 1858. **Aguirre, Ruperto.**—Expedición al Riff: su importancia, necessidad y conveniencia. **Madrid**: 4to. (Duro.)

791. 1858. **Die Bewohner** der Westküste von Marokko. Petermann's Geograph. Mittheilungen, 1858, p. 168.

792. 1858. **Benjamin, Israel Joseph.**—Acht Jahre in Asien und Afrika von 1846 bis 1855 .... Nebst einem Vorwort von Dr. B. Seeman. Zweite Auflage mit vergleichenden Notizen aus B. de Tudela, R. Pethachia, P. Teixeira und Ritter's Erdkunde. Hannover: 8vo, pp. 314.

An English Version, "Eight Years in Asia and Africa," published at Hanover in 1863, 8vo, pp. 376.

Chap. xlii. refers to Morocco; chap. xliii. regarding the Jews in North Africa.

793. 1858. **Jones, John Harris.** — اذكر فتح الاندلس. Ibn Abd-el-Hakem's History of the Conquest of Spain, now edited for the first time, translated from the Arabic, with critical and exegetical notes, and a historical introduction. Goettingen: 8vo, pp. 81 (English), pp. 28 (Arabic); of which pp. 17 are introduction by the translator and pp. 43 are text; the rest exegetical notes of much value.

This work contains much about the Morocco of the period of the Invasion.

794. 1858. **Leo Africanus.** — Études biographiques: Jean Léon l'Africain. Berbrugger, Revue Africaine, No. 11, June, vol. ii., pp. 353–364.

As the writer only knew the French and Latin versions of Leo, his account is very imperfect.

795. 1859. **Murray, Mrs. Elizabeth.** — Sixteen Years of an Artist's life in Morocco, Spain, and the Canary Islands. London: 8vo, 2 vol. pp. 352 and 344, with a view of Morocco.

The first 104 pages of vol. i. are devoted to Morocco. The author's experiences are confined to Tangier, where she resided during the French bombardment of 1844. Some statements in the book so offended Spanish officers that for months after its appearance her husband received challenges.

796. 1859–60. **Mrs. Murray's Morocco.** Littell's Living Age. (Boston, U.S.)

797. 1859. **Godard, Léon, Père.**—Soirées Algériennes. Tours: 8vo.

Many particulars about Moorish piracy and slavery.

798. 1859. **Goeje, M. J. de.**—Specimen literarum inaugurale exhibens Descriptionem Al-Magribi Sumtum e libro regionum **al-Jaqubi.** Lugduni-Batavorum: 8vo, pp. 170 and ٢٩. Arabic text, with Latin translation, of a description of the coast from Egypt to the Atlantic Ocean. Important for the geography of N. Africa in the 14th century. Reprinted in full, in Goeje's Bib. Geog. Arab., 1891, Pars Septima. The Arabic title of the work is

صفة المغرب الماخوذة من كتاب البلدان لاحمد بن ابي يعقوب ابن واضح الكاتب المعروف با ليعقوبي.

799. 1858–85. **Collecção de Monumentos** ineditos para à Historia das Conquistas dos Portuguezas em Africa, Asia e America. Lisboa: 9 vol. in 14 parts.

800. 1859. **El-Bekri.** Description de l'Afrique Septentrionale, traduit par **MacGuckin de Slane.** Paris: 8vo, pp. 432. See Nos. 16, 780.

801. 1859. **Godard, Léon,** Curé d'El-Aghouat. — Le Maroc; Notes d'un Voyageur. Alger: 8vo, pp. 147. Originally published in the 'Akhbar' and 'Revue Africaine.'

A work full of information, but marred by want of order and the absence of any table of contents or index. See No. 831.

802. 1859. **Bargès, l'Abbé, J. S. L.**—Tlemçen, ancienne capitale du royaume de ce nom. Paris: 8vo, pp. 479, 12 plates.

This work abounds in information of the most valuable nature. The ancient history of this place is intimately connected with that of Morocco.

803. 1859. **Faidherbe, le Col.**—Renseignements géographiques sur la partie du Sahara comprise entre l'Oued-Noun et le Soudan. Nouv. Ann. des Voy., August.

804. ——— Considérations sur les populations de l'Afrique Septentrionale. l. c., September.

805. 1859. **Cotte, Narcisse,** Anc. Attaché au Cons. Gén. de France au Maroc. —Le Maroc contemporain. Paris: 12mo, pp. 298.

The author resided three years at Tangier and Rabat, but made no journeys into the interior.

806. 1859. **Duval, M.**—La question du Maroc, et les intérêts européens en Afrique. Revue des deux Mondes, 15th December.

807. 1859. **Castaing, Alph.**—La question Marocaine. 8vo. Broch. (De la Martinière.)

808. 1859. **Hugonnet, F.**—Épisode de la guerre d'Afrique. Perplexités des troupes de Lalla-Marnia pendant le Massacre de Sidi-Brahim. Spect. Milit. 2me Sér., vol. xxv. p. 436.

Episode of the war on the frontier of Morocco.

809. ——— De quelques Célébrités de l'armée d'Afrique. II. Bugeaud, Duc d'Isly. l. c., vol. xxviii. p. 61.

Gives an account of his operations in Morocco.

810. 1859. **Martin, Ch.,** Commandant des Dragons de l'Impératrice.—Guerre de la France et de l'Espagne avec le Maroc. Résumé historique des expéditions des Espagnols en Afrique. l. c., p. 181 *et seq.*

811. 1859. **Alonso Valdespino, Santiago.**—La cuestión de Marruecos tal cual ha sido, es y será bajo el punto de vista español y europeo. Madrid: 8vo. (Duro.)

812. ——— La question du Maroc, ce qu'elle a été, est et sera, examinée au point de vue espagnol et européen. Trad. avec avant-propos par C. Lamartinière. Paris: 8vo.

813. 1859. **Marques de Prado, José.**—Recuerdos de Africa. Historia de la plaza de Ceuta. Madrid: 8vo, pp. 244. Map of Ceuta and neighbourhood.

814. 1859. **Amor, Fernando.**—Recuerdos de un viaje á Marruecos. Sevilla: 8vo.

This writer was an accomplished naturalist.

815. 1859. **Diana, D. Manuel Juan.**—Un prisionero en el Riff. Memorias del Ayudante Álvarez. Madrid: 16mo, 1859, 2nd edition, pp. 336.

816. 1859. **Alermon y Dorreguis.**—Descripción del Imperio de Marruecos, en que se trata principalmente de las instituciones, usos, costumbres, etc., de sus habitantes y de la topografia del pais. Madrid, Malaga: 8vo, pp. viii. and 72, with map.

817. 1859. **Convenio** ampliando los términos jurisdiccionales de Melilla y pactando la adopción de las medidas necessarias para la seguridad de los presidios

españoles en la costa de África, celebrado entre España y Marruecos en Tetuán el 24 de Agosto de 1859. Colec. Janer. Martens, 'Nouv. Rec. Gén. de Tr.,' t. xvii. p. 124.

818. 1859–60. **Rotondo, Antonio.**—La Argelia antigua y moderna, desde los primeros establecimentos de los Cartagineses hasta la expedición del General Randón, en 1853, por **M. Léon Galibert** [No. 655]; y **El Imperio de Marruecos**, escrito por los historiadores de más fama, traducido y continuado con todos los acontecimientos á que pueda dar lugar la cuestión hoy pendiente entre España y dicho país por D. A. R., con una introducción escrita por **D. Manuel María Flamant.** Obra ilustrada con magníficas láminas por los mejores artistas espagñoles, en negro e iluminadas, que representan batallas, trajes, retratos, revistas, etc. Madrid: 3 vol., 4to. (Duro.)

The first vol. is entirely occupied with Algeria, the second and third with Morocco and the Spanish war.

819. 1859. **Campazano y Gonzalez, Ramón.**—Sobre la oportunidad de la guerra de África. Madrid: 4to. (Duro.)

820. 1859. **Arteche, Don José Gomez de,** and **D. Francisco Coello,** Coronels.—Descripción y mapas de Marruecos, con algunas consideraciones sobre la importancia de la occupacion militar de una parte de este imperio. Madrid: 8vo, pp. 145, with an important map of Morocco.

821. 1859. **Castillo, Rafael del.**—España y Marruecos. Historia de la guerra de África escrita desde el Campamento. Cadiz: 4to, pp. 570. (Duro.)

822. 1859–60. **Alcacon, Pedro A. de.**—Diario de un testigo de la guerra de África. Madrid: 3 vols., 12mo; 2nd ed., corrected, 1880.

823. 1859. **Castelar, Don Emilio; D. F. de Paula Canalejas; D. G. Cruzada Villaamil** y **D. Miguel Morayta.**—Crónica de la Guerra de África. Madrid: fol., pp. 270. Issued originally in numbers.

824. 1859. **Some Account of Morocco.** Fraser's Magazine, December, pp. 720–738.

825. 1859. **Saez de Melgar, Faustina.**—África y España. Cantos poéticos escritos con motivo de la guerra de Marruecos, por la Señora Doña.... Madrid: 4to, pp. 15. (Duro.)

826. 1859. **Thornbury, Walter.**—Life in Spain: Past and Present. 2 vols. London: 8vo.

Chap. x., vol. ii., pp. 221–244 is devoted to a sketch of Ceuta.

827. 1860. **Cooke, G. Wingrove.**—Conquest and Colonisation of North Africa. Edinburgh, Blackwood: 8vo, pp. 246.

Chap. xix., p. 227, is on "The Relations of Morocco with Europe." The book is reprinted from the 'Times.'

828. 1860. **Lowe, Rev. Richard Thomas.**—A List of Plants collected at Mogador and its immediate environs during a few days' visit to the place in April 1859, with notes and observations. Journ. and Proc. of the Linnean Society, Botany, vol. v., pp. 26–45.

The same translated into German: 'Character der Vegetation bei Mogador.' Peterm., Geogr. Mittheil., 1861, p. 353.

The list comprises 177 species of flowering plants.

829. 1860. ——— A List of the Shells observed or collected at Mogador and in

its immediate environs during a few days' visit to the place in April 1859, with notes and observations. Journal and Proc. of the Linnean Society, Zoology vol. v., pp. 169–204.

830. 1860. **El Eco de Tetuan**; Editor, P. A. Alarcon.

This weekly (the first newspaper ever published in Morocco) was issued in the Spanish camp at Tetuan during the time that town was occupied by Marshal O'Donnell's (Duke of Tetuan) troops. It lasted only a few months.

831. 1860. **Godard, Léon,** Chanoine honoraire d'Alger. — Description et Histoire du Maroc, comprenant la géographie et la statistique de ce pays, d'après les renseignements les plus récents et le tableau du règne des Souverains qui l'ont gouverné, depuis les temps les plus anciens jusqu'à la paix de Tétouan en 1860. Paris: 2 vols., 8vo, pp. 680, continuous pagination, with map. Reviewed by M. Malte-Brun in 'Nouv. Ann. des Voyages,' t. iv. of 1860, p. 112.

This is a reproduction, revised and considerably augmented, of the author's two previous works, Nos. 778, 797. It is a valuable and convenient compilation, though full of inexcusable errors and prejudices.

The reverend author, who belongs very much to the Church militant, attributes to England the idea of forming a settlement between Tetuan and Ceuta, and then (pp. 664–666) gives a scheme for the French conquest of the country: "On pousserait la guerre de différents côtés, de sorte que le chérif ne saurait où porter la défense, et l'on se hâterait de lui susciter, pour comble quelque prétendant à la souveraineté . . . . *Mektoub!* c'était écrit."

832. 1860. **Gérard, Jules.**—L'Afrique du Nord: description, histoire, armée, populations, administration et colonisation, chasses, le Maroc. Illustrations de J. A. Beaucé. Paris: 8vo, pp. 401.

The chapter on Morocco is the tenth (pp. 369–382); it is a compiled sketch of its general features in the vicinity of Algeria.

833. 1860. **Defrémery, Ch.** — Note sur l'origine de la Ville de Tetouan. Nouv. Ann. des Voy., t. ii. of 1860, pp. 129–33.

A résumé of a letter to the 'Constitutionnel' of the 23rd March, by a distinguished tourist, M. de Chevarrier.

834. 1860. **Fillias, M. A.** — L'Espagne et le Maroc en 1860. Paris: 8vo, pp. 170.

This gives a short account of the principal cities of Morocco, a summary of the ancient conquests of Spain and Portugal in the country, and an account of the war with Spain in 1859. It is marked by a strong animus against England.

835. 1860. **Berbrugger, A.**—Les Frontières de l'Algérie. Rev. Afr., vol. iv., p. 401.

He advocates as the western frontier of Algeria the line of the Moulouia and the Guir.

836. 1860. **Kasimirski A. de Bibenstein.**—Dictionnaire arabe-français, contenant toutes les racines de . . . . dialectes d'Alger et de Maroc. Paris: 8vo. New edition by Ibed Gallab, 4 vols., 4to. Cairo [Boulak], 1875.

837. 1860–74. **Müller, L.**—Numismatique de l'Ancienne Afrique — ouvrage préparé et commencé par **C. T. Falbe** et **J. Chr. Lindberg.** Refait, achevé et publié par L. Müller. Copenhague: 3 vol., 4to, and Supplement.

Vol. i.—Les Monnaies de la Cyrénaïque. pp. xii. 174.

Vol. ii.—Les Monnaies de la Syrtique, de la Byzacène et la Zeugitane. pp. viii. 188.

Vol. viii.—Les Monnaies de la Numidie et de la Mauritanie. pp. vi. 194.

Supplement.—Additional coins from all these regions. pp. iv. 96.

All profusely illustrated. A standard work.

838. 1860. **Liebermann, J.** — Appel à la charité des Juifs en faveur de leurs coréligionaires Marocains. Nancy: 8vo.

839. 1860. **Célébration de la prise de Tetuan,** à Alger, par les artisans espagnols. Alger: 12mo, pp. 16.

840. 1860. **Cánovas del Castillo, Antonio.** — Apuntes para la Historia de Marruecos. Madrid. (Duro.)

841. 1860. **De Prado, J. A.**—Recuerdos de África. Historia de la plaza de Ceuta, ecc. 2ª edic. Madrid: 4to, pp. 244, with map.

842. 1860. **Bueno, J. M.**—Diccionario Geográfico, estadistica, historico, ecc. del Imperio de Marruecos. Entrega 1. Valencia: pp. 1–16.

843. 1860. **Torrijos, Manuel.** — Noticia de alguno de los puertos y poblaciones de la Costa del Imperio Marroqui. Madrid: Crónica Naval, t. x., p. 332. (Duro.)

844. 1860. **Dirección de Hidrografia.**—Derrotero de la Costa de Marruecos desde Cabo Espartel á Cabo Bojador, por **M. Charles Philippe de Kerhallet** en 1821. Madrid: 4to. See No. 786.

845. 1860. **Ferreiro, M.**—Descripción del Imperio de Marruecos. Madrid: 8vo, pp. 24.

846. 1860. **Fernandez Duro, Casáreo,** Captain in the Spanish Navy.—Noticias de la bahía y ciudad de Mogador, con plano y vistas. Anuario de la Dirección de Hidrog., Year iii., pp. 259–279. (Duro.)

847. 1860. **Chaix, P.**—Étude sur l'ethnographie de l'Afrique. Avec 3 cartes. Mémoires et Bulletin de la Société de Géographie de Genève, July, pp. 1–89.

Not of much value so far as Morocco is concerned.

848. 1860. **Weyler y Laviña, D. Fernando.** — Catálogo de las plantas naturales observadas en la parte del N. del Imperio Marroqui durante la última guerra. (Originally printed in No. 849.) Palma, P. J. Gelabert: 8vo.

He enumerates 460 species collected between Ceuta and Tetuan, but the precise localities are not given, and there are many evident blunders in determination.

849. ——— Apuntes topográficos sobre la parte del imperio Marroqui que ha sido teatro en la última guerra con España. Palma, P. J. Gelabert: 8vo, 44 pp.

850. 1860. **Baudoz, A.,** et **I. Osiris.** — Histoire de la guerre d'Espagne avec le Maroc. Paris: 8vo, pp. 348, with a lith. plate of Señor Calderon-Collantes, Minister of Foreign Affairs, and other Spanish dignitaries. 2nd ed. in 1868.

This is evidently written under Spanish inspiration.

851. 1860. **Landa, Nicasio.**—La Campaña de Marruecos. Memorias de un Médico Militar, ayudante que fué del Cuartel general del ejército de África. Madrid: 8vo. (Duro.)

852. 1860. **Album de la Guerra** de África, formado con presencia de datos oficiales, y publicado por el periódico *Los Novedades.* Madrid: fol., with illustrations. (Duro.)

853. 1860–61. **Ibo Alfaro, Manuel.**—La Corona de laurel. Colección de biografías de los generales que han tomado parte en la gloriosa Campaña de África, y apuntes curiosos. Madrid: 3 vol., 4to, with lithographic illustrations.

Vol. iii. contains copy of the treaty of peace and commerce between Spain and Morocco, dated 20th Nov. 1861. (Duro.)

854. 1860. **Cervino, Joaquin José.**—La nueva guerra púnica ó España en Marruecos. Poema premiado en certámen extraordinario celebrado por la Real Academia española para commemorar los triunfos de las armas españolas en la guerra de África. Madrid: 4to. (Duro.)

855. 1860. **Guerra de África.**—Poesiás que da á luz la Real Academia Española, habiéndolas juzgado merecedoras de mención honorífica entre las presentadas al certámen extraordinario, abierto para conmemorar los triumfos de las armas españolas en la guerra de África. Madrid: 4to, pp. 101.

856. 1860. **Bastella, Eduardo D.**—Romance de la Guerra de África. Madrid: 4to, pp. 192; also in 'Gaceta Militar,' fol., pp. 187.

857. 1860. **Molins, El-Marqués de.**—El romancero de la guerra de África, presentado á la Reina doña Isabel II. y al Rey su augusto esposo. Publicado de Órden y á expensas de SS. MM. Madrid: 16mo, pp. 8+384+Index and notes.

A series of poems on various aspects of the Spanish war against Morocco in 1859–60.

858. 1860. **Arnao, Antonio.**—La Campaña de África, poema en dos cantos que obtuvo el accésit en el cartámen extraordinario abierto por la Real Academia española en 17 de Febrero de 1860, para conmemorar los triunfos de las armas españolas en la guerra de África. Madrid: 4to, pp. 47. (Duro.)

859. 1860. **Blanco Herrero, D. M.**—La guerra de África: La Atlantida, poema. Madrid: 4to, pp. vii. + 45. (Duro.)

860. 1860. **Bono Serrano, Gaspar.**—Capellan de honor de S. M. entre los arcades de roma argero Latinio. A las Victorias contra Marruecos. Madrid: 4to, pp. 13. (Duro.)

861. 1860. **Amador de los Rios y Rada y Delgado.**—Victorias de África, oda de D. J. A. de los Rios, y canto en octavas, con motivo de la toma de Tetuán por D. Juan de Dios de Rada y Delgado: Composiciones leidas á S.S. M.M. en presencia de S.S. A.A. R.R. los Sermos. Infantes Duques de Montpensier. Madrid: 4to, pp. 18. (Duro.)

862. 1860. **Castillo y Olivas, Pedro Maria.**—Diálogos españoles-árabes ó guia de la Conversación Moghrabi, dedicados al ejército de mar y tierra. Madrid: 8vo, pp. 110. (Duro.)

863. 1860. **Schickler, F.**—Quelques jours au Maroc. Notes de Voyages. 'Tour du Monde,' vol. i., pp. 5–10, 28–32, with illustrations.

The author went no further than Tangier.

864. 1860. **Lanoye, F. de.**—Voyages au Maroc (1670, 1789, 1860). **Le Maroc au dix-septième siècle,** relation du Sieur Mouëtte. **Le Maroc au dix-huitième siècle,** relation de Lemprière. **Le Maroc à l'époque actuelle,** relation de James Richardson. l. c., pp. 209–224, with map and illustrations.

An epitome of the travels of these three authors, *q.v.*

865. 1860. **Da Cunha, Rivera.**—Catalogo dos manuscriptos da Bib. Publica Eborense. Lisboa, 2 vols.

866. 1860. **Reinhold, W.**—Marokko und die Marokkaner. With illustrations. 'Westermann's illustrirte Monatshefte,' March.

867. 1860. **Kiepert, Heinrich.**—Der nördliche Theil des Sultanats Marocco. Zeitsch. für allgemeine Erdk., Nos. 79–81. Remarks on the map of Morocco. With map.

868. 1860. **Barth, Henry.**—A general Historical Description of the State of Human Society in Northern Central Africa. Proceedings of the Roy. Geog. Soc., Lond., vol. xiii., pp. 112–136, with a map of North Africa.

This paper is not directly on Morocco, but it contains various data regarding that country.

869. 1860? **Soto, le Colonel Raimundo de.**—Apuntes historicos sobre las expediciones de los Españoles a Africa. La Asamblea Militar. (De la Martinière.)

870. 1860. **Blakesley, J. W.** — Morocco and North Africa. Macmillan's Magazine, vol. i., p. 229; same article, Eclectic Magazine, vol. l., p. 173.

871. 1860. **Beaumier, A.**, French Consular Agent at Rabat and Sallee.—Roudh el-Kartas. Histoire des Souverains du Maghreb (Espagne et Maroc) et annales de la ville de Fès. Traduit de l'Arabe par . . . Paris: publié sous les auspices du Ministère des Aff. Étrang., 8vo, pp. 576.

This translation is based on two MSS., one from Fez and the other from Tunis. The author, according to the copy used by Moura, that quoted by Conde as preserved in the Royal Library of Madrid, Imam Abou Mohammed Saleh ben Abd-el-Halim of Granada, but according to other copies (Gayango's, several in the Bodleian Library, one seen by Gråberg di Hemsö and De Sacy) Abu'l-Hassan ben Abd Allah ben Abi Zara' al-Fasi commences his history at the flight of Edris, who, driven out of Arabia, came to Morocco, built Fez (A.D. 762), and founded the dynasty of the Edrisites, which reigned 200 years. He finishes it at the reign of the 9th Sovereign of the Beni Merin family, under whom he lived (A.D. 1326).

Several translations of this valuable work (the most important upon the history of Morocco in existence), more or less complete, have been published previously: one in German by Dombay, Agram, 1794–1797, *Geschichte der Mauritanischen Könige;* another in Portuguese by the P. Antonio Moura, in Lisbon, 1828, *Historia dos Soberanos Mahometanos;* and a third by Tornberg, in Latin with the Arab text, Upsala, 1843–45, 2 vol., 4to, *Annales regum Mauritaniae.* See Nos. 26, 465, 554, 646, 1523. Dr. R. Brown owns De Sacy's MS. copy written in two African hands. This MS. professes to be penned by Abu 'l-Hassan ben Abd-Allah ben Abi Zara' al-Fasi (الفاسي ابو زرع). There is an exhaustive footnote on the subject in Gayango's edition of Al Makkari, vol. ii. pp. 515–16.

872. 1860. **Richardson, James.**—Travels in Morocco. Edited by his Widow, with Introduction by Captain L. Trant Cave. London: 2 vol., 8vo, plates, pp. xxiv. 301+319.

Still a very useful work. Richardson died on the frontier of Bornu, in the course of his journey to Timbuktu from Tripoli. Before his departure for Central Africa he endeavoured unsuccessfully to penetrate to Merakish and to induce the Sultan to abolish the slave trade. He visited Mogador and Tangier, and collected much interesting information. The introduction by Capt. Cave is a wild piece of writing.

873. 1860. **Richardson's Travels in Morocco.** Colburn's Magazine (London), January 1860 (vol. 118), pp. 1–27.

874. 1860. **Morocco and the Moors.** Review of Richardson's 'Travels in Morocco,' No. 872. Tait's Edinburgh Magazine, N.S., February, vol. xxvii., pp. 120–122.

875. 1860. **On Morocco.** Reviews of James Richardson (No. 872); Xavier Durrieu (No. 756); and O. C. D. Ross (No. 376). London Quarterly Review, pp. 148–167.

876. 1860. **Ross, O. C. D.**—Spain and the War with Morocco. London: 8vo.

877. 1860. **Thomas, Rev. Charles W.**—Adventures and Observations on the West Coast of Africa and its Islands. Historical and descriptive sketches of Madeira, Canary, Biafra, and Cape Verd Islands: their climates, inhabitants, and productions. Accounts of places, peoples, customs, trades, missionary operations, etc., on that part of the African Coast lying between Tangier, Morocco and Benguela, with illustrations from original Drawings. New York: 8vo, pp. 479.

Chapters i. and ii. relate to Morocco; chiefly Tangier and Mogador. The work is by the Chaplain to the U.S. African Squadron in 1855, 1856 and 1857.

An English abridged edition published: London, 1864, 8vo, pp. 250, without illustrations.

878. 1860. **War by Spain on Morocco.**—Copies of Official Correspondence, viz.: I. Circular of Mohamed el-Katib to Foreign representatives at Tangier, and his Correspondence with the Spanish Chargé d'Affaires. II. Circular of Spanish Government to Missions abroad. III. Mohamed el-Katib's reply to Spanish Circular. IV. Correspondence between the English and Spanish Governments. Manchester: 8vo, pp. 40.

879. 1860. **Hardman, Frederick.** — The Spanish Campaign in Morocco. Edinburgh and London: 8vo, pp. 323.

The author was Special Correspondent of the 'Times,' in which his letters were originally published. They were written at the head-quarters of the Spanish army, and contain a faithful account of the operations they describe.

880. 1861. **Dozy, R.**—Histoire des Musulmans d'Espagne jusqu'à la conquête de l'Andalousie par les Almoravides (711–1110). Leyde: 4 vol. 8vo. Vol. i. pp. viii. 392; vol. ii. pp. 356; vol. iii. pp. 374; vol. iv. pp. 341, including additions and corrections printed in 1873.

These volumes on the history of the Mussulmin of Spain, which supersede all other works on the same subject, and it may be added render all others superfluous, are necessary for the history of Morocco also, containing as they do many references to that country, and MSS. concerning it (vol. iv. pp. 306–311).

881. 1861. **Baeumen, August von.**—Nach Marokko: Reise- und Kriegsmemoiren. (With a view of Tetuan and a portrait of General Prim.) Berlin: 8vo, pp. 333.

882. 1861. **Catalogue** of the MS. Maps, Charts, and Plans in the British Museum.

In vol. iii. pp. 403–407 are notices of many interesting and valuable maps, plans, and views of Tangier and other places in Morocco. A number of the last are by **Hollar.** There are others of Algiers, pp. 407–409; of Tunis,

pp. 409–411; and of Tripoli, pp. 411–412. Most of the Morocco maps are recatalogued from this volume in No. 1771, by De la Martiniere.

883. 1861. **Engelmann, W. H., Dr.**—Glossaire des mots Espagnols et Portugais dérivés de l'Arabe. Leyde: 8vo.

A second edition, revised and enlarged, was published in 1869 under the joint authorship of Professor Dozy and Dr. Engelmann, Leyden, 8vo, pp. xii. 424. It is a most useful work for any one studying Barbary Arabic, in which there are a number of words which may be traced to Spanish. Many of the Arab family names are identical with those of Spain.

884. 1861. **Convention** between Great Britain and Morocco, relative to a loan to be raised in London by the Emperor. Signed at Tangier, 24th Oct., ratified 20th Dec., negotiated by John Drummond Hay, Esq., C.B., Her Majesty's Resident. Hertslet's Treaties, vol. xi. p. 425.

A **Supplementary Convention** was signed on the 18th January, 1862. l. c., p. 426.

885. 1861. **Si Bou el-Moghdad,** of Saint-Louis (Sénégal).—Voyage par terre entre le Sénégal et le Maroc du 10 Déc. 1860 au 6 Mars 1861. Malte-Brun, Nouv. Ann. des Voy., vol. lxxi., June, July, August, p. 257 *et seq.* Also Rev. Marit. et Colon., May, t. i., pp. 479–494, with map.

886. ——— Reise durch die Westliche Sahara, Dezember 1860 bis Marz 1861. Petermann's Geographische Mittheilungen.

887. 1861. **Chauchard, Achille,** Capitaine d'Infanterie.—Espagne et Maroc. Campagne de 1859–1860. Paris: 8vo, pp. 500. 3 maps. 100 copies printed.

888. 1861. **Bache, Paul Eugène.**—Souvenir d'un voyage à Mogador en 1859. Rev. Marit. et Colon., t. i. pp. 81–99.

A detailed description of Mogador and its population in 1859.

889. 1861. **Berbrugger, A.**—Occupation Anglaise de Tanger de 1662 à 1683. Rev. Afr., vol. v., p. 337.

This article first appeared in the Algerian 'Akhbar' in 1855. The present is a revised and augmented edition.

890. 1861. **Barbié du Bocage, V. A.**—Le Maroc. Notice Géographique. Bull. Soc. Géogr. de Paris, cinquième Sér., t. i., p. 461 *et seq.*

891. ——— Ethnographie Marocaine. Nouv. Ann. des Voy. 1861, t. ii. pp. 20–78.

A compilation of information from various authors and official publications. The subjects treated of are: 1, Population of Morocco; 2, Constitution of Society; 3, Science and Arts.

892. ——— Le Maroc. Notice Géographique. Paris: 8vo, pp. xi. and 151.

The first part, "Maroc," pp. 80, is extracted from the 'Bull. Soc. Géogr.,' pp. 25–45 and 120–132. Second part, "Ethnographie," pp. 59, was originally printed in 'Nouv. Ann. des Voyages,' April 1841. Third part, "Relations commerciales entre l'Empire et Maroc; le Sahara Occidental et le Soudan,' pp. 10, is from the 'Rev. du Monde Colonial.'

893. 1861. **Atmeller, Victoriano.**—Juicio crítico de la Guerra de Africa. Madrid: 4to.

894. 1861. **Galindo y de Vera, Léon.**—Intereses legitimos y permanentes que en africa tiene España, y deberes que la civilización le impone respecto

á aquel país. Memoria premiada por la Academia de la Historia en 1861. Madrid: 4to, pp. 52. (Duro.)

895. 1861. **Messina é Iglesias, D. Felix Maria de,** Marqués de La Serna. —Atlas historico, con presencia de los documentes oficiales y demas datos recogidos por dicho cuerpo durante las operaciones, y topográfico de la Guerra de África sostenida por la nacion española contra el imperio Marroqui en 1859–1860. La publica de Real órden el Deposito de la Guerra á cargo del cuerpo de Estado Mayor del Ejército, Siendo director general del mismo el Teniente el general . . . y jefe del depósito el Brigadier Coronel de E. M. Don Francisco Parreño y Lobato de la Calle. Madrid: oblong folio (no date).

This splendid Atlas, published under the direction of the War Office (Estado Mayor del Ejército), is by a variety of officers. Nine pages are devoted to the letterpress, which constitute Part I. Part II. contains, in addition to a sheet of conventional signs, &c., nine maps of battles and the country over which the operations of 1859–60 extended. Part III. is devoted to twelve "Panoramas": Ceuta, Tetuan, Wad-Ras, &c., by Velasco and others.

896. 1861. **Tratado** entre España y Marruecos para arreglar las diferencias suscitadas sobre el cumplimiento del convenio de límites con Melilla en 1859 y del Tratado de paz de 1860, firmado en Madrid el 30 Octubre de 1861. Colec. Janer. See Marten's 'Rec. Gén. de Tr.,' t. xvii., p. 129.

897. 1861. **Tratado** de Comercio celebrado entre España y Marruecos, firmado en Madrid el 20 de Noviembre de 1861. Colec. Janer. (Duro.)

898. 1862. **Duval, Jules.**—Rapport sur Rondh-el-Kartas (No. 871) par A. Beaumier. Bull. Soc. Géogr., Paris, 5e Sér. t. iii. p. 87.

899. 1862. **Lafunte y Alcántara, Emilio.**—Catálogo de los Códices Arábigos adquiridos en Tetuán por el Gobierno de S. M., formado por D. Emilio L. A. ó impreso de órden y á expensas del Ministerio del Fomento. Madrid: 4to, pp. 96.

In the Introduction there is an account of the cities of Ceuta and Tetuan and of the condition of the Moorish people.

900. 1862. **Tauxier, Henri.**—Étude sur les Migrations des Nations Berbères avant l'Islamisme. 'Journal Asiatique' (Paris), Sept. and Oct., pp. 340–354. Also separately, pp. 15.

Gives a review of the geographical distribution of races in North-west Africa about the time of Mohammed, and he traces from it the principal migrations and invasions before the Mohammedan era.

901. 1862. **Weyler y Laviña, D. Fernando,** Sub-inspector jefe de Sanidad Militar del primer cuerpo del ejército de África.—Apuntes topográficos sobre la parte del Imperio Marroqui que ha sido teatro de la última guerra con España. Palma de Mallorca; 8vo. (Duro.)

902. 1862. **Ceuta.** Reglamento del regimiento de Caballeria de Ceuta. Madrid. (Duro.)

903. 1862. **Dirección de Hidrographía.**—Derretero de las costas occidentales de Africa, redactado en la Direccion de H. con presencia de las publicaciones más recientes. Comprende desde Tánger hasta la bahia de Algoa. Madrid: 4to, with views of the Coast.

904. 1862. **Lafuente y Alcantara Don Emilio.**—Catálogo de los Códices Arábigos adquiridos en Tetuan par el Gobierno de S.M. Madrid: 8vo, pp. 80.

Contains a list of 233 MSS.

905. 1862. **Martino, Giuseppe de.**—Commercio e Navigazione nel Marocco. Bolletino consolare, June, pp. 325–373.

Signor de Martino was the Italian Consul-General in Tangier.

906. 1862. **Rohlfs, Gerhard.** Tagebuch einer Reise durch die südlichen Provinzen Marokko, 1862. Petermann, Geog. Mitth., October, pp. 360–370.

Narrative of a journey in the southern provinces of Morocco.

907. 1862. **Brehm, A. E.**—Reiseskizzen aus Nord-Ost-Afrika vom Jahre 1847 bis 52. Jena: 8vo, 3 vol. pp. 376, 272, 358. The last only treats of Morocco.

908. 1863. **British Order in Council,** extending the Regulations for preventing **Collision at Sea** to the Ships of . . . . Morocco. Dated 27th July. Hertslet's 'Treaties,' vol. xi. p. 1089. Modified by the Order in Council of the 30th July, 1868. l. c., vol. xii. p. 1113.

909. 1863. **Judas.**—Sur l'Écriture et la Langue berbère dans l'antiquité et de nos jours. Paris: 8vo.

910. 1863. **Berbrugger, L. A.**—Les Colonnes d'Hercule, excursions à Tanger, Gibraltar, etc. Alger, Paris: 18mo, pp. 131.

This first appeared in the Akhbar, and is, as the author states, "la simple réunion de notes de voyage."

911. 1863. **Yriarte, Charles.**—Sous la Tente, souvenirs du Maroc, récit des Guerre et de Voyage. Paris: 12mo, pp. 316.

The author was correspondent of the *Monde Illustré* during the War of Morocco, 1859.

912. 1863. **De Forcade la Roquette.**—Rapport presenté au conseil supérieur de commerce, etc., sur la Commerce et la Navigation de l'Algérie. Alger: 4to, pp. 295.

This gives much interesting information regarding the overland commerce between Algeria and Morocco.

913. 1863. **Schlagintweit, Eduard.**—Der Spanisch-marokkanische Krieg in den Jahren 1859 und 1860. Mit Benützung der vorhandenen Quellen und nach eigener Beobachtung. Leipzig: 8vo, pp. xii. + 381, with a Map of North Morocco.

914. ——— Ethnographische Skizzen aus Marokko. Das Ausland, No. 25, pp. 586–590.

915. 1863. **Beynet.**—Les Drames du Désert, scènes de la vie arabe sur les frontières du Maroc. Paris: 8vo.

916. 1863. **Saint-Martin, Vivien de.**—Le Nord de l'Afrique dans l'Antiquité Grecque et Romaine; Étude historique et géographique. Ouvrage couronné en 1860 par l'Académie des Inscriptions et Belles-Lettres. Accompagné de quatre Cartes. Paris: 8vo, pp. xix. and 519.

917. 1863. **Ceuta.** Ordenanzas Municipales de Ceuta. Un Cuaderno en 4to, Bib. del Consejo de Estado. (Duro.)

918. 1863. **Moutbé, Hauptm. A. v.** Der Feldzug der Spanier in Marokko 1859 und 1860, nach dem Spanischen Operations-Journal. Mit 2 Karten und 3 Planen. Osterr. Militärische Zeitschrift, 1863, Heft 9, *et seq.*

This is a translation of No. 895, and consists of three portions: 1st, the Journal of Military Operations; 2nd, Topography; 3rd, Views of principal places in Morocco.

919. 1863. **Rohlfs, Gerhard.**—Aus Wegesack. Tagebuch einer Reise durch die Südlichen Provinzen von Marokko, 1862. Petermann's Geogr. Mittheilungen, pp. 360–370; also a short notice, p. 276.

920. 1863. **Regolamento sulle Protezioni Consolari, Tangeri.**—Trattati e Convenzioni conchiusi dal Regno d'Italia. Roma, vol. viii., p. 523.

921. ——— The French "Réglement sur la Protection." De Clercq's Rec. des Traités, t. xv., p. 472.

922. 1864. **Forster, John.** — Sir John Eliot; a Biography, 1590–1632. London: 2 vol. 8vo. Pages 316–321, and p. 428 (footnote), refer to the Barbary pirates.—See also Quart. Rev., 1865, p. 64.

923. 1864. **Montefiore, Sir Moses.**—Narrative of a Mission to the Empire of Morocco. 1863–64. London, 8vo [privately printed].

Partly translated in "Missione di Morocco, Giorn[illegible] di viaggo" (Trieste, 1864, 8vo, pp. 12).

924. 1864. **Reade, Consul.**—Report on the Trade of Morocco for the year 1863. Consular Comm. Reports between July 1, 1863, and June 30, 1864, p. 176.

925. 1864. **Rioque, Dr. C.**—Recherches ethnologiques sur les populations Musulmanes du Nord de l'Afrique. Paris: 8vo, 15 pp. (From Revue d'Orient, de l'Algérie et des Colonies.)

926. 1864. **Résumé** de l'Histoire ancienne de l'Algérie et de la régence de Tunis et du Maroc avant la conquête Mussulmane. Paris. (De la Martinière.)

927. 1864. **Champlouis, M. Nau De,** Capitaine au Corps Impérial d'État-major.—Notice sur la carte de l'Afrique sous la domination des Romains, dressée au Dépôt de la Guerre d'après les travaux de **M. Fr. Lacroix,** par ordre de S.E. le Maréchal Comte Randon, Min. de la Guerre. Paris: 4to, pp. 46.

The map in question is in two large sheets (2,000,000ᵉ), and includes the whole district between the Cyrenaica and the Atlantic.—See also L'Ann. Géogr., t. iii. p. 110.

928. 1864. **Mouchez, Capitaine.**—Exposé des Opérations géodésiques exécutées dans la reconnaissance du detroit de Gibraltar et de la côte nord du Maroc en 1854 et 1855 par **M. Boutroux,** Ingénieur hydrographique. Ann. Hydr. Paris: 1863, 4ᵉ trimestre; 1864, 1ᵉʳ trim., and separately 8vo, pp. 19, 2 plates.

929. 1864. **Beynet, Léon.**—Les Drames du Désert. Scènes de la Vie Arabe sur les frontières du Maroc. Paris: 12mo.

930. 1864. **Da Cunha, Luiz Maria do Couto de Albuquerque.**—Memorias para a historia da praça de Mazagão . . . . revistas helo socio effectivo Levy Maria Jordão. One of the publications of the Academia Real das Sciencias de Lisboa. Lisboa: 4to, pp. ii.+176.

The author born at Lisbon in 1828; died at St. Thome in 1860.

931. 1864. **Merry, Francisco y Colom.,** Minister of Spain in Morocco.—Relacion del Viaje a la Ciudad de Marruecos que por disposicion del Excmo. Sr. D. Manuel Pando, Marques de Miraflores, primer Secretario de estado, verificó en el Mes de Mayo de 1863. Madrid: 4to. Interesting and concise. See also No. 406.

932. ——— Un Viaje a Fez. Revista de España, t. ii., pp. 394.

933. 1864. **Ataque de las Kabilas.**—Á la Guarnición de Melilla, en el acto de reconocer el campo. Gaceta de Madrid, 6 de Agosto. (Duro.)

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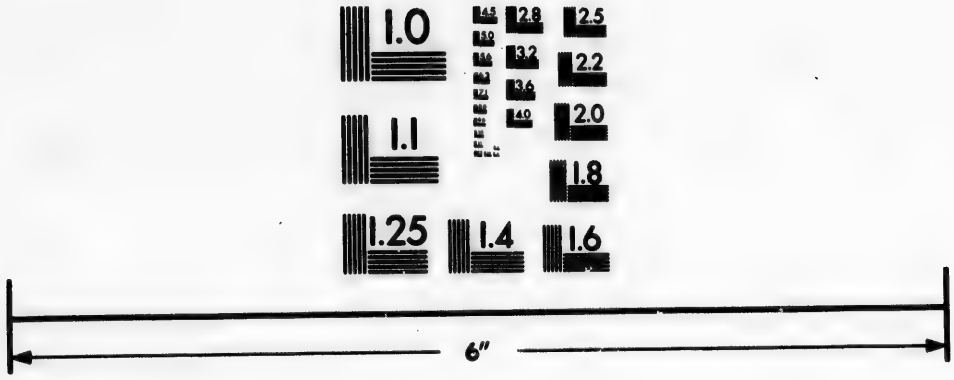

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In consequence of this attack a Spanish expedition was ordered against the Riff, and at the same time the army of the Sultan proceeded against the offenders.

934. 1864. **Veer, G. de.**—Prinz Heinrich der Seefahrer und seine Zeit. Danzig: 8vo, pp. 290, with 2 maps.

A good account of Dom Henrique's expeditions against Ceuta and Tangier.

935. 1864. **Rohlfs, Gerhard.**—Briefe aus Algerien und Marokko, Oktober, 1863 bis April, 1864. Peterm., Geogr. Mitth., pp. 336–342.

936. ——— Voyage de Gerhard Rohlfs du Maroc à Tombouctou. Nouv. Ann. des Voyages, December, 1863.

937. 1865. **Hodgkin, Dr. Thomas.**—Notes of some superficial Geological Appearances observed in the N.W. portion of Morocco, on a visit to Tangier, and a coasting voyage to Mogador, a land journey thence to Morocco, and from that city to Mazagan, and in the voyage thence to Gibraltar by way of Tangier. Proc. Roy. Geogr. Soc., vol. ix., pp. 24–27. Subsequently published as an appendix to the author's work, No. 960.

938. 1865. **Oliviera, Benjamin.**—A visit to the Spanish Camp in Morocco, during the late war. London: 8vo. (Privately printed.)

939. 1865. **Convention between Great Britain and other European nations, and Morocco** relative to the establishment and maintenance of a Lighthouse on Cape Spartel. In the French and Arabic languages. Signed at Tangier, 31 May. Hertslet's Treaties, vol. xii., p. 658; Marten's Nouv. Rec. Gén. de Tr., t. 20, pp. 350.

940. 1865. **Woolridge, Vice-Consul.**—Report on the Trade of Dar-el-Baida for the year 1864. Cons. Comm. Rep., Pt. i., pp. 254.

941. 1865. **Duncan, Vice-Consul.**—Report on the Trade of Laraiche. l. c., pp. 255.

942. 1865. **Stokes, Vice-Consul.**—Report on the Trade of Mazagan. l. c., pp. 256.

943. 1865. **Elton, Vice-Consul.**—Report on the Trade of Mogador. l. c., pp. 257.

944. 1865. **White, Consul.**—Report on the Trade of Morocco. l. c., pp. 258.

945. 1865. **Hay, Vice-Consul James.**—Report on the Trade of Rabat. l. c., pp. 263.

946. 1865. **Carstensen, Vice-Consul.**—Report on the Trade of Saffee. l. c., pp. 267.

947. 1865. **Berbrugger, A.**—Siège de Melilla par les Marocains à la fin du 17e siècle et commencement du suivant. Rev. Afr., vol. ix., pp. 366.

He gives two unpublished documents contained in a volume numbered 1686 in the library of the Government General at Algiers. They are written by Don Domingo de Canal y Soldevila, Governor of Melilla to the Duke d'Hijar.

948. 1865–1882. **Lavayssière, P.**—Stations dans l'Empire du Maroc. 5 Brochures printed in 1865, 1870, 1876, 1879, 1882, at Limoges (de la Martinière).

949. 1865. **Mogador.**—Anuario de Madrid 1865; and *Nautical Magazine*, 166, pp. 516–521; Nov. 582–588. Dated from Mogador, Dec. 1860.

No signature.

950. 1865. **Gatell, Joaquin.**—Memoria de las observaciones hechas durante su viage al Sus y Uad-Nun. Remitida al Ministerio de Estado. MS. inéd. en el Archivo del Misme.

Contiene:—1. Observaciones generales. 2. Diario de la expedición. 3. Mapa de Uad-Nun. 4. Idem de Tekna. 5. Plano de Agadir Iguír. 6. Aspecte desde el mar de Agadir Iguír. 7. Playa y Costa que se descubre desde la Muralla de Agadir Iguír y perfil de las montañas del Atlas. 8. Mapa del Sus. 9. Idem de Tarudant. 10. Plano de Auguilmien. 11. Idem de Vina. 12. Embocadura del Guad-Xbika. 14. Plano de Tarfaya. 15. Idem de Saibajarsa. 16. Itinerarios desde Uad-Nun a Tafilete, el Tuet á Tum buktú al Sudán y al Senegal. (Duro.)

951. 1865. **Bourguignat, I. R.**—Malacologie d'Algérie: ou histoire naturelle des animaux mollusques terrestres et fluviatiles, recuellis jusqu'à ce jour dans nos provences du Nord d'Afrique. Paris: 4to, 2 vols., pp. 294, 32 plates, and pp. 380, 26 plates.

This fine work contains many Moroccan species.

952. 1865. **Stein, Paul.** — Schilderungen aus Tanger. Wistermann's Deutschen Monatsschrift, April, pp. 47–64.

953. 1865. **Sayer, Frederic.**—The History of Gibraltar and of its political relation to Events in Europe, with original letters from Sir George Elliot, Admiral Collingwood and Lord Nelson. London: 8vo, pp. 534, 2nd ed. (a reprint of the 1st ed., with fresh preface and the addition of 14 pp. on the bone caves).

It gives an account of the relations between Morocco and Gibraltar, and (pp. 280, 340, 341) the negotiations with the Sultan during the siege of 1780–83.

954. 1865. **Rohlfs.**—Neueste Nachrichten von Herrn . . . . Zeitschrift für allgemeine Erdkunde, November, 1865, pp. 353–357.

Letters directed by Rohlfs to Dr. Barth on the termination of the river of Touat. Contradicted by Duveyrier in 'Annales des Voyages,' March, 1866, pp. 257–272.

955. ——— Brief an Herrn **Dr. H. Barth.** Zeitsch. für allgem. Erdkunde, März, 1865, pp. 227–232.

Letter from Dr. Barth on the Arab and Berber population of Morocco.

956. ——— Neueste Nachrichten von Herrn . . . . Zeitschrift für allgemeine Erdkunde, November, pp. 353–357.

957. ——— Briefe von . . . . Peterm., Geogr. Mitth., pp. 70–73.

Letters of G. R., written from Tripoli, Algeria and Morocco in October, 1863, and April, 1864.

958. ——— Tagebuch seiner Reise durch Marokko nach Tuat. Gotha: 8vo, maps. l. c., pp. 401–417.

1. Abschnitt: Reise von Tanger bis Ued-Sidi-Hassan, 14 März bis 9 Mai 1864. l. c., p. 82, map 4. 2. Abschnitt: Reise von Uled-Sidi-Hassan bis Karsas im Ued Ssaura, 10 Mai bis 25 Juli. l. c., p. 165, map 6. 3. Abschnitt: Reise von Karsas im Ued Ssaura nach ain Salah, 29 Juli bis 17 September, und allgemeine Beschreibung von Tuat. l. c., p. 402, map 14, and 1886, p. 119.

959. 1866. **Nicholl, John.**—Some account of the Worshipful Company of Ironmongers, compiled from their own records and other authentic sources of information. London: privately printed, 4to, pp. 637 and xlviii.

This contains an account of **John Betton,** who left half his fortune for the redemption of slaves in Barbary.

In 1750 the Emperor of Morocco made a demand for £17,000 out of this fund, p. 346. The company actually paid £7,647 in that year, and lesser sums every year till the reduction of Algiers by Lord Exmouth. What remained of the money was distributed under an order of the Court of Chancery.

960. 1866. **Hodgkin, Thomas, M.D.**—Narrative of a Journey to Morocco in 1833–64, with geological annotations. London: 8vo, pp. 183, with map and illustrations.

This is an account of Sir Moses Montefiore's visit. See also Nos. 923, 937.

961. 1866. **Woolridge, Vice-Consul.**—Report on the trade of Dar-el-Baida during 1865. Cons. Comm. Reports, Part i., pp. 171.

962. 1866. **Duncan, Vice-Consul.**—Report on the trade of Laraiche. l. c., pp. 173.

963. 1866. **Stokes, Vice-Consul.**—Report on the trade of Mazagan. l. c., pp. 174.

964. 1866. **Carstensen, Vice-Consul.**—Report on the Trade of Mogador. l. c., pp. 175.

965. 1866. **White, Consul.**—Report on the trade of Morocco. l. c., pp. 176.

966. 1866. **Hay, Vice-Consul.**—Report on the Trade of Rabat. l. c., pp. 179.

967. 1866. **Elton, Vice-Consul.**—Report on the trade of Saffee. l. c., pp. 181.

968. 1866. **Green, Vice-Consul.**—Report on the Trade of Tetuan. l. c., pp. 182.

A most interesting report on the history and condition of the province.

969. 1867. **Tauxier, H.**—La Libye ancienne des Colonnes d'Hercule au fleuve Sala. Ann. des Voy., October, pp. 5–71.

970. 1866. **Berbrugger, A.**—Une lettre inédite d'un Empereur du Maroc, 1578. Rev. Afr., vol. x., pp. 451–472.

971. 1866. **D'Antas, Miguel,** Portuguese Ambassador at London.—Les Faux Don Sebastian. Paris: 8vo.

This contains an interesting account of the tragedy known in Portuguese history as the battle of Alcassar el Kebir, in which Dom Sebastian was killed. A translated abstract of it is given by Dr. Leared. See No. 1317.

972. 1866. **Hellwald, Ferdinand de,** voyage **d'Adrien Matham** au Maroc (1640–1641).—Journal de voyage publié pour la première fois, avec notice biographique de l'Auteur, introduction et notes. La Haye: 8vo, pp. vi.+87.

The author was a painter of Harlem, who accompanied the Embassy of Admiral Antoine Liedekerke, sent by the Government of Holland to the Sultan of Morocco. The MS. from which this journal is published forms the 37th vol. of a work only found in the Imperial library at Vienna, a special edition of the celebrated atlas of Jean Blaeu. It contains a map of Africa, several views of Tangier, and a fine MS. entitled: *Journael vande Ambassade vanden Heer Anthonis de Liedekerke wegens haer Ho. Mo. de Heeren staeten Generael van de verenichde Nederlanden gesonden naer den Coninck van Marocco, welk*

journael gehouden is op het schip 'Gelderlandt' door Adriaen Matham constrijk schilder die de naer volgende tekeningen ook heeft gemaeckt."

In the MS. itself are 31 original drawings, by the artist, of places and persons in Morocco.

Liedekerke left Saffi on the 7th March, 1641, visited the Sultan at Merakish, and rejoined his ship on the 22nd May. Thence he sailed to Agadir, where he embarked the forty-five slaves whose ransom he had paid.

Hellwald gives the MS. in the original Dutch, and precedes it by a valuable *Aperçu historique des Voyages au Maroc jusqu'à nos jours.*

973. 1866–72. **Mas Latrie, le Comte L. de.**—Traités de Paix et de Commerce et documents divers concernant les relations des chrétiens avec les Arabes de l'Afrique septentrionale au moyen âge, publiés avec une introduction historique. Paris: 4to, 2nd ed., 1868. In three parts. Part I. (Preface and historical introduction), pp. xxvii : 343. Part II. (Documents regarding Christian relations with the Arabs), pp. 402. Supplementary (1872), pp. 118, with Chronological tables, Glossaries, Documents and Index.

Full of valuable information regarding Morocco, and the relations between that country and the Christian Powers of the Mediterranean.

The documents in the Second part and Supplement relating to Morocco are:—(1) A.D. 1138. Treaty in which the Marseillais contract an alliance with the Republic of Genoa for ten years, and promise that should the Republic either obtain for them a treaty with the King of Morocco, or agree to defend them against the said king for ten years, they should pay all expenses, p. 88. (2) 1160 or 1161. Extract from Caffaro, concerning a treaty concluded for fifteen years by an envoy of Genoa, with the Almohadite king of Morocco, Abd-el-Mumin, p. 108. (3) 1226, 17th May. Pope Honorius III. authorises the Preaching Friars and the Minor Brothers staying in Morocco to wear their beards, p. 9. (4) 1237, 12th June. Pope Gregory IX. congratulates himself on the state of the Church in Morocco, and announces to the native churches that he has sent a bishop to them, p. 11. (5) 1245, 24th Sept. Pope Innocent IV. authorises the Knights of St. James to accept the gift which the King of Salli appears willing to make them in the shape of his States on demanding baptism, p. 12. (6) 1246, 25th Oct. Innocent IV. begs the Kings of Tunis, of Ceuta, and of Bugia, to grant their protection to the Bishop of Morocco, and to the minor members of the religious fraternities, p. 13. (7) 1246, 31st Oct. Innocent IV. thanks the King of Morocco for the benefits which he, like his predecessors, had conferred on the Church, p. 14. (8) 1246, 19th Dec. Innocent IV. announces to the African Christians the nomination of Loup as the new Bishop of Morocco, p. 15. (9) 1251, 16th March. Innocent IV. begs the new King of Morocco to arrange places of security on the sea coast for the Christians of his realm, p. 16. (10) 1274, 18th Nov. Treaty between Abu-Yussuf Yakub, King of Morocco, personally present at Barcelona, and James I., King of Aragon and Majorca, Seigneur of Montpellier, who promised the King of Morocco ten ships and 500 knights for the conquest of Ceuta, p. 285. (11) 1290, 9th Feb. Pope Nicolas IV. recommends to the Knights and the men at arms serving in the armies of the Kings of Morocco, Tunis and Tlemçen, to always live the Christian life in the midst of the Infidels, p. 17. (12) 1302, 1st June. The Magistrates of Barcelona petition the King of Morocco to permit the exportation of wheat to Barcelona, p. 291. (13) 1309, 3rd May. A Letter of James II., King of Aragon, to Abu-Rebia Suliman,

King of Morocco, offering the basis of a treaty of alliance against all the Moorish kings, particularly against the King of Granada, who was master of Ceuta; Instructions to Don Jaspert, Viscount of Castelnau, charging him to leave for Morocco with the fleet of Aragon, p. 297. (14) 1323, 1st May. Letter of James II., King of Aragon, to Abu-Said Othman, King of Morocco, and instructions to Romain de Corbière, Envoy to Morocco, p. 315. (15) 1339, 15th April. Treaty made at Tlemçen for Ten Years between James II., King of Majorca and Seigneur of Montpellier, and Abul-Hassan Ali, King of Morocco, by the intermediary of Almaric de Narbonne, p. 192. (15) 1339, 1st May. Treaty made at Madrid between the King of Aragon and the King of Castile, to make war on the King of Benimaren, or of Morocco, *Suppl.* p. 63. (16) 1344, 18th Oct. Abul-Hassan Ali, King of Morocco, having received information of a treaty having been resolved upon between Abu-l-hej-áj Yussuf I., King of Granada, on the one part, and the Genoese and Catalans on the other, approves of the conditions of the treaty, and informs the King of Granada that should they so desire it, the Genoese and Catalans will be included in a treaty which he is on the eve of concluding with the King of Castile, *Suppl.*, p. 64. (17) 1344, 17th Dec. Abú-l-hejaj Yussuf I., King of Granada, authorised by the Emir Al-Mumenin Abul-Hassan Ali, King of Morocco, to conclude definitively a treaty of peace projected between the Kingdoms of Granada and Aragon (and the Genoese), giving plenary powers to his Secretary to ratify this treaty, *Suppl.*, p. 65. (18) 1357, 10th Aug. Letter of Peter IV., King of Aragon, to Abu-Einan, King of Morocco, extending for five years the last treaty for five years concluded at Saragossa, p. 325. (19) Letter of Peter IV., King of Aragon, to Abu-Einan, King of Morocco, trying to persuade him to accord the help asked by the King of Castile against Don Fernand, Seigneur of Albarassin, p. 327. (20) 1388, 1st Sept. John I. King of Aragon, authorises Gilabert Rovira of Tortosa to leave for the Kingdom of Fez, with fifty men at arms "et decem mulieres publicas ad servitium eorumdem," to take part in the war against the Saracens, *Suppl.* p. 69. The peculiar camp-followers mentioned were such regular accompaniments of Spanish and other armies, that even Saint Louis had to tolerate their presence; and the force raised in Italy in 1567 by the Duke of Alva, to take service in Flanders, though it did not consist of more than 10,000 or 12,000 men, was followed by so great a number of the persons mentioned, that they formed a company of 800 infantry and a squadron of 400 cavalry, each under a chief and carrying a flag.—Brantôme, *Le Duc d'Albe*, t. i., p. 106, etc. (21) 1390, 18th April and 7th May. Receipt of Jean de Béthencourt (the Conqueror of the Canaries) for the sum of one hundred francs, granted him by the Duke of Touraine to help his journey to Barbary. Receipt of Gadiffer de la Salle for the sum of two hundred francs received for the same purpose, p. 102. (22) Pragmatic Sanction, given at Burgos, of Ferdinand the Catholic, imposing 50 per cent. duty on woollen stuffs of foreign origin imported into the towns of Bugia, Tripoli and Algiers, or any other of the African possessions of the Crown of Aragon, p. 338. Several of the other papers have indirect reference to Morocco. The latest is dated 1540, though it is evident that many are lacking. There are, for example, none touching the relations of England and North Africa in the Middle Ages.

974. 1866. **Dozy, R., et M. I. de Goeje.**—Description de l'Afrique et de l'Espagne par **Edrisi.** Texte Arabe publié pour la première fois d'après les Manuscrits de Paris et d'Oxford, avec une Traduction, des Notes et un Glossaire.

Leyde: 8vo, pp. xxiii. 391–٢٣٢. The Arabic title is—

صفة المغرب وارض السودان و مصر والاندلس ماخوذة من كتاب نزهة المشتاق في اختراق الافاق تاليف الشريف الادريسي See No. 17. This edition corrects the many errors of Jaubert. No. 589.

975. 1866. **Rohlfs, Gerhard.**—Neueste Briefe von Gerhard Rohlfs und Rückblick auf seine bisherigen Reisen in Afrika in den Jahren 1861 bis 1865. Peterm., Geogr. Mitth., pp. 3–8, map. No. 2.

976. ——— Tagebuch seiner Reise von Tuat nach Rhadames, 1864. l.c., pp. 8–26.

977. ——— Resultate der Rohlf'schen Höhenmessungen in Marokko und Tuat. l.c., pp. 119.

978. ——— Reise über den Marokkanischen Atlas nach Tuat. l. c., pp. 35.

979. ——— Nachrichten von Gerhard Rohlfs. l. c., pp. 235; 263–305.

980. ——— Mémoire zur Karte von G. Rohlfs Reise durch die Oasen von Tuat und Tidikelt, 1864, von B. Hassenstein. l. c., pp. 53–61.

981. ——— Nachrichten von Gerhard Rohlfs. l. c., pp. 118, 227–230.

982. ——— Briefe von Gerhard Rohlfs aus Bilma. l. c., pp. 368–356.

983. ——— Résumé historique et géographique de l'Exploration de G. Rohlfs au Touat et à In-çalâh d'après le journal de ce voyageur, publié par les soins d'Aug. Petermann, Annales des voyages, 1866, par V. A. Malte-Brun. pp. 49 *et seq.* and map.

984. 1866. **Mogador.**—Anuario de Madrid, 1865, and Nautical Magazine, October, 1866, pp. 515–582, and November, pp. 582–588.

Description of the town, country and climate.

985. 1866. **Magno de Castilho, Alexander.**—Descripção e roheiro da costa occidental di Africa, desde o cabo de Espartel ate' o das Agulhas. Lisboa: 8vo, pp. 430, with 8 maps.

986. 1867. **Drake, C. F. Tyrwhitt.**—Notes on the Birds of Tangier and Eastern Morocco. Ibis: 1867, p. 421.

987. ——— List of birds observed in Morocco. l. c., p. 426.

988. 1867. **Woolridge, Vice-Consul Frank.**—Report on the Trade of Dar-el-Beida for 1866. Cons. Comm. Reports, pt. i., p. 304.

989. 1867. **Duncan, Vice-Consul Alex. B. T.**—Report on the Trade of Laraiche. l. c., pp. 306.

990. 1867. **Stokes, Vice-Consul Octavius.**—Report on the Trade of Mazagan. l. c., pp. 307.

991. 1867. **White, Consul.**—Report on the Trade of Morocco. l. c., p. 308.

992. 1867. **St. Chaffray, Alfred, Acting Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 311.

993. 1867. **Elton, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 313.

994. 1867. **Green, Consul W. K.**—Report on the Trade of Tetuan. l. c., p. 315.

995. 1867. **Mogador.**—Annales hydrographiques, pp. 137. (De la Martinière.)

996. 1867. **Mogador.**—Vgl. z. d. Gesch. für Erdkunde, ii. 67, p. 470. Berlin. (De la Martinière.)

997. 1867. **Beaumier, Aug.**, Consul de France à Mogador.—Le Maroc. Bull. Soc. Géogr., Paris, 5e Sér., t. xiv., p. 5–51. Also separately, Paris, 8vo, pp. 47.

A Memoir communicated by the Ministry of For. Aff.

998. 1867. **Gilbert, J.**—Note sur la province de Chaouya. Bull. de la Soc. de Géogr. de Paris, Mars 1867, pp. 325—327.

999. 1867. **Ibn Khaldun.**—Ketabu 'l Ibr wa Diwan ul-Mubtoda : كتاب العبر وديوان المبتدا والخبر في ايام العرب والعجم والبربر

General History of the Arabs, the Persians, and the Berbers (Mauritanians), by Abu Zaid Abd-er-Rahman bin Khaldun, *in Arabic*, 7 vols. and Supplement to vol. ii., together 8 vols. Bulak : A.H. 1284, royal 8vo, with a lengthy introduction —or "Mukaddamah"—to the science of history. See Nos. 29, 632, 738, 789.

1000. 1867. **Duval, Jules.**—Un Ouvrier-Voyageur, René Caillié. Paris : 12mo, pp. 52.

1001. 1867. **Lagrange, Dr. A.**—Plantes des environs de Tanger en Maroc. 8vo, pp. 11.

This list while in the author's autograph was not published. It gives a list of the Spring plants within six or eight leagues of Tangier, many of the specimens being collected by Madame Octavie Lagrange, who produced, also in autograph, a small 8vo volume, 'Souvenirs de Voyage en Algérie et en Tunisie' (1868), giving an account of her travels in the Barbary States. A sixteenth of Dr. Lagrange's plants are new to Morocco.

1002. 1867. **Dastugue, Lt.-Col. H.**—Quelques Mots au sujet de Tafilet et de Sidjilmassa. Bull. Soc. Géogr., Paris, 5th Sér., t. xiii p. 337.

The author's object is to show that Sijelmassa existed until the commencement of the 19th century. He gives three maps—1, Tafilala, properly so-called ; 2, the districts of Wad-er-Reteb, and of Medaghera to the north of the above-mentioned place ; and 3, the entire country which forms the Government of Tafilala.

1003. 1867. **La Ville de Maroc**, son Histoire et les Mœurs de ses habitants. 'Moniteur Universel,' 10th Jan.

1004. 1867. **Gilbert, Th.**—Observations Météorologiques faites à Casa Blanca, Maroc. Bull. Soc. Géogr. Paris, 1867, pp. 698–700.

1005. 1867. **Rohlfs, Gerhard.**—Petermann's Geogr, Mittheil. : Die Expedition von, p. 217. Rückkehr aus Afrika, seine Durchschneidung des Continents, p. 311 ; Nachrichten, p. 34 ; Gerücht seiner Ermordung in Wadai, p. 275.

1006. ——— Reise d. Marokko, Uebersteig. des Grossen Atlas, Exploration der Oasen von Tafilet, Tuat und Tidikelt und Reise durch die grosse Wüste über Rhadames nach Tripoli. Bremen : 8vo, pp. 200, with map. 4th ed. Norden, 1884, pp. 278.

1007. ——— Account of a Journey across the Atlas Mountains and through the Oases Tuat and Tidikelt to Tripoli by way of Ghadames in the year 1864. Proc. R. Geogr. Soc., Lond., vol. ix. No. vi. pp. 312–314.

1008. ——— Uebersicht von G. R. Reise durch Afrika, 1866 bis 1867, pp. 372, map.

1009. 1867. **Report** on the Commerce of Tangier, 1866. Versammlung von Konsuläre Berichten, s. 38.

1010. 1867. **San Martin, Antonio de.**—Costumbres de Marruecos Arbites in 'El Museo Universal,' Madrid, 13 in number. (Duro.)

1011. 1867. **Tyrwhitt-Drake, C. F.**—List of Birds observed in Morocco. Ibis: pp. 426.

1012. 1868. **Wooldridge, Vice-Consul.**—Report on the Trade and Commerce of Dar-el-Baida for 1867. For. Off. Comm. Rep., Pt. i., p. 474.

1013. 1868. **Duncan, Vice-Consul.**—Report on the Trade of Laraiche. l. c., p. 476.

1014. 1868. **Stokes, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 477.

1015. 1868. **Carstensen, Vice-Consul.**—Report on the Trade of Mogador. l. c., p. 478.

1016. 1868. **Smith, Vice-Consul Cecil.**—Report on the Trade of Rabat. l. c., p. 480.

1017. 1868. **Elton, Vice-Consul.**—Report on the Trade of Saffee. l. c., p. 483.

1018. 1868. **Green, Vice-Consul W. K.**—Report on the Trade of Tetuan. l. c., p. 487.

1019. 1868. **Livet, Charles.**—Rapport sur les documents relatif à l'Histoire de France, conservés aux Archives de la *Torre do Tombo* à Lisbonne. Arch. des Missions Scientifiques et Littéraires. Paris: t. v., pp. 63–137.

Many of these are connected with Morocco. The following are a few:—9. Azevedo, D. Manoel d', ambassadeur, Lettre au Secrétaire d'état . . . sur ce qui se passait à l'égard du Maroc, 14 Sep. 1521. 33. Carvalho, Alvaro de, Gouverneur de Mazagan. . . . Secours à un Navire Français. 99. Mendes de Vasconcellos João, Lettre au Roi du sujet du Maroc, Siège d'Oran, &c., 7 Sep. 1512. 152. Deposition de D. Fernando de Castro, Comte de Basto, sur la perte du Roi D. Sébastien à la Bataille d'Alcaçar-el-Kébir, 9 Juin 1592.

1020. 1868. **Major, R. H.**—Life of Prince Henry of Portugal. London: 8vo. Giving an account of his campaigns against Morocco.

1021. 1868. **Schätzungen** der Ortsbevölkerungen Afrika's. Geographische Jahrbuch, Bd. ii., 1868, pp. 111–120.

1022. 1868. **Balansa, B.**—Voyage de Mogador à Maroc au point de vue botanique. Bull. Soc. Géogr. Paris, No. 27, pp. 312–334.

This botanical collector (ob. 1892) penetrated Morocco to the Atlas. His plants were described by Durrieu de Maisoneuve, Boissier, Reuter, Ball an Cosson, which last in his 'Compendium Floræ Atlanticæ,' vol. i., pp. 16–17, gives a synopsis of his journeys.

1023. 1868. **An Empire without a Doctor.** 'St. James's Magazine' (London). June, vol. 1, n.s. pp. 975–980.

1024. 1868. **Lambert, Paul.**—Notice sur la Ville de Maroc. Bull. Soc. Géogr. Paris, 5e Sér. t. xxi. pp. 430–447.

1025. 1868. **Thévenin, Dr.**—Du climat de Mogador sous le rapport des affections pulmonaires. l. c., pp. 335–339.

1026. 1868. **Gilbert, T.**—Observations Météorologiques faites à Casa-Blanca. l. c. pp. 403–405; t. xxii. pp. 88–99.

1027. 1868. **Jeres Perchet, Augusto.**—Viage á la Costa de Africa. Melilla, Chafarinas, Cabo del Agua. 'Museo Universal. Madrid: 8vo, pp. 150.

1028. 1868. **Murga, José M. de.**—Recuerdos Marroquies del Moro Vizcaino (a) El Hach Mohamed el Bagdády. Bilbao: 4to.

1029. 1868. **El-Hach Mohamed el-Bagdády.**—Recuerdos Marroquies del Moro vizcaino José Maria de Murga, El Hach Mohamed el Bagdady, Los Renegados, Origen de los Cherifs, Batalla de Alcázar, Contrastes entre españoles y berberiscos, Los Dein Chifa, Apuntes sobre las razas que habitan en Marroccos, Moros, Arabes, Beróberes, Negros y Judios, Máximas evangélicas, La ley del Talion. Bilbao: 4to.

The most interesting of his articles is "Los Renegados, Monografia de una familia próxima á extinguirse, y que no fué descrita por Buffon, La describe José Maria de Murga que fue individuo de ella IN PARTIBUS INFIDELIUM."

1030. 1868. **Rohlfs, Gerhard.**—Reise durch Marokko, Uebersteigung des grossen Atlas, Exploration des Oasen v. Tafilet, Tuat, u. Tidikeldtu. Reise durch die grosse Wüste üb. Rhadames nach Tripoli. Bremen: 8vo, pp. 200, with map and portrait.

1031. 1868. **Beaumier, Aug.**—Excursion de Mogador à Saffy. Bull. Soc. Géogr. Paris, 3e Sér. (April), t. xv. pp. 305–311; also separately, pp. 34, with map.

1032. ——— Itinéraire de Mogador à Maroc et de Maroc à Saffy. l. c. (October), t. xvi., p. 321.

1033. ——— Description Sommaire de Maroc. Paris: 8vo, pp. 10–44; also published in Ann. des Voy. 1870.

1034. 1868. **Maltzan, Heinr. Freiherr von.**—Drei Jahre im Nordwesten von Afrika. Reisen in Algerien und Morokko. Leipzig: 4 vols. pp. 1247, plates and map.

An interesting work, the result of seven successive voyages by an ardent and intelligent traveller. The fourth volume is on Morocco-Tangier, the Coast towns and Merakish.

1035. 1869. **Drake, C. F. Tyrwhitt.**—Further Notes on the Birds of Morocco. Ibis, 1869, pp. 147. See also No. 1011.

1036. 1869. **Wooldridge, Acting Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1868. Cons. Comm. Rep. p. 370.

1037. 1869. **Stokes, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 372.

1038. 1869. **Woolridge, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 373.

1039. 1869. **Elton, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 377.

1040. 1869. **White, Consul.**—Report on the Trade of Morocco. l. c., p. 379.

1041. 1869. **Desjardins, Ernest.**—La Table de Peutinger d'après l'original conservé à Vienne, précédée d'une introduction historique et critique. Paris: folio.

1042. 1869. **Joubert, André.**—De Cadix à Tanger. Rev. d'Angers. (De la Martinière.)

1043. 1869. **Gatell, Joaquin** (Kaïd Ismail).—L'Ouad Noun et la Tekna, à la côte occidentale du Maroc. Bull. Soc. Géogr. Paris, Oct., vol. xviii., pp. 257–287, with map.

1044. 1869. **Gatell, Joaquin** (Kaïd Ismail).—Viages por Marruecos, el Sus, Vad-Nun, y Tekna. Madrid: 8vo.

1045. 1869. **Aperçu** et Sommaire du Commerce des États barbaresques en 1866 et 1867. Mouvement Maritime et Commercial des ports de Tanger, Rabat, Salé, Casablanca, Mazagran et Saffi. Ann. Com. exter. Paris, Août.

1046. 1869. **Butler, Guillermo.** — Documentos relativos el cautiverio de españoles en Uad-Nun. Cadiz: 4to, pp. 34; also in 'Revista Médica,' Bomba 1.

The documents in question give the history of the attempt to create a commerce between the Canaries and the Wad-Nun, the captivity and subsequent liberation of the parties concerned.

In the Rev. Med. for 1870 the subject is continued, and the correspondence given between Don G. Butler ("Butler, Abrines")—a Spanish subject but of English descent—and the legation at Tangier.

1047. 1869. **Tratado** de paz y Amistad celebrado entre España y Marruecos, firmado en Tetuán el 26 de Abril de 1860. Colec. Janer. (Duro.)

1048. 1869. **Jerez Perchet, Augusto.**—Cuatro dias en el Riff Museo Universal. Madrid: 8vo, pp. 291.

1049. 1869. **Beaumont, Pedro.**—Memoria sobra la plaza de Melilla formadas con acuerdo de la Comisión de oficiales facultativos de todas armas, nombrada para el reconocimiento en 1869. MS. in the Spanish Ministry of War quoted in Conf. sobre el Hach Moh. el Baghdady.

1050. 1869. **Fernandez Duro, Cesáreo.**—Anuario de la Comisión de pesca para los años de 1868 y 1869. 4to. (Duro.)

This treats of the fishery on the west coast of Africa by boats from the Canary Islands.

1051. 1869. **Manega, R.** — Marokko's Handel. Der Welthandel, 1 Jahrg. Heft 6, pp. 303–307.

1052. 1869. **Schaefer.**—Négociations des villes hanséatiques avec le Sultan de Maroc. Historische Zeitschrift, No. 3.

1053. 1870. **Craig, J.**, Engineer.—Un Aperçu sur le Maroc. Bull. Soc. Géogr. Paris, 5e Sér. xix., pp. 177–203.

This is a translation from the English original by Paul Voelkel.

1054. 1870. **Picatier, Ad.**—Exploits d'un Officier français dans le Maroc. Paris: 2nd edition, pp. 108.

1055. 1870. **Mordokhai,** Rabbi Abi-Serour de Akka.—Premier Établissement des Israélites à Timbouktou, par Auguste Beaumier, Consul de France à Mogador.

This, with the exception of a few introductory remarks, is the translation of an account of a journey by the Rabbi Mordokhai. He started from his native place, Akka, an oasis south-west of Merakish, the first after leaving Agadir, and reached Timbuktu, wherein he gives a curious account of the Jewish colony there and the half Pagan half Moslem races, believed to be Jews, whom he met on the way.

Bulletin de la Soc. de Géog. Paris, April and May, pp. 345–370, with portrait of Mordokhai (Le Rabbin Mardochée) and map. The paper has also been published separately (Paris, 8vo, pp. 30) and partly translated (Reisen nach Timbuktu) in Petermann's Geographische Mittheilungen, Bd. 10, pp. 335–336.

1056. 1870. **Meulemans, Auguste.**—L'Empire du Maroc et ses relations com-

merciales avec la Belgique. Bruxelles: 8vo, pp. 15. Extracted from the 'Revue de Belgique,' vol. iii. p. 355, Dec. 1869.

A compilation of no value; the author travelled no further than to the "Exposition Universelle de Paris."

1057. 1870. **Mourlon, Michel.**—Esquisse Géologique sur le Maroc. Bull. Acad. royale de Belgique, vol. xxx., 2me Série, No. 7, 1870, pp. 18; also reprinted for private circulation, 8vo, pp. 18.

1058. 1870. **Lopez Botas, Antonio,** Diputado constituyente.—Los españoles cautivos en Marruecos. Observaciones sobre el resultado de los expedientes relativos al establecimiento de relaciones mercantiles entre España y el territorio de Uad Nun, en el imperio de Marruecos, y ál cautiverio y rescute de los súbditos españoles, D. Francisco Puyana, D. Jacobo Butler y D. José Silva. Madrid: 4to, pp. 57. Another edition in 1871, pp. 40. (Duro.)

1059. 1870. **Memoria** sobre la situation de Santa Cruz de Mar Pequeña en la costa N.O. de Africa. Revista General de Marina, Madrid: t. iii., 2do semestre.

1060. 1870. **Erganzungen** dazu, namentlich in Bezug auf Marokko, Tunesien, etc. Geographische Jahrbuch, Bd. iii., 1870, pp. 139–141.

1061. 1870. **Aus Afrika** und Spanien, Erlebnisse und Schilderungen, 2 vols., 8vo. Jena.

1062. 1870. **Goeje, M. J. de.**—Bibliotheca geographorum arabicorum (5 vols.) Part I. Viae regnorum. Descriptio ditionis moslemicae auctore Abu-Ishák al Farisi al Istakhri. Lugduni Batavorum: 8vo, pp. ٣٢٨. See also No. 13.

The Arabic title of the work is كتاب مسالك الممالك لابن اسحاق بن محمد الفارسي الاصطخري.

1063. 1871. **Blackmore, William.**—A Ride to Gebel Mousa in North-Western Barbary. Bates' Illustrated Travels (Cassell's), pt. xxv., v. iii., pp. 15–22.

1064. ——— A Visit to the Sultan of Marocco at Fez in the spring of 1871. l. c., Part xxxiii., pp. 276–282; part xxxiv., pp. 310–314; part xxxvi., pp. 364–368.

1065. 1871. **Hooker, J. D.** — Letters to Sir Roderick Murchison, giving an account of his Ascent of the Atlas. Proc. Roy. Geogr. Soc. of London, vol. xv., pp. 212–221.

1066. 1871. **Drummond Hay, R.**—Report on the Artizan and Industrial Classes in Morocco. Further Rep. from H.M. Dip. and Cons. Agents Abroad respecting the condition of the Industrial Classes, pp. 334.

1067. 1871. **Mercier, Ernest.** — Ethnographie de l'Afrique Septentrionale. Notes sur l'origine du peuple Berbère. Revue Africaine, No. 90, November, pp. 420–435.

1068. 1871. **Nares, Sir George S., R.N.**—Investigation of the Gibraltar Strait Current. A Report to the Hydrographer of the Admiralty. London: roy. 8vo, with fine chart of both sides of the Strait.

1069. 1871. **Dupuis, Vice-Consul.**—Report on the Trade of Dar-el-Baida during the year 1869. Consular Comm. Reports received at F. O. during 1869–70, p. 598.

1070. 1871. **Stokes, Vice-Consul.**—Report on the Trade of Mazagan during 1869. l. c., p. 801.

1071. 1871. **Carstensen, Vice-Consul.**—Report on the Trade of Mogador during 1869. l. c., p. 602.

1072. 1871. **White, Consul.**—Report on the Trade of Morocco for 1869. l. c., p. 603.

1073. 1871. **Woolridge, Vice-Consul.**—Report on the Trade of Rabat during 1869. l. c., p. 609.

1074. 1871. **Hunot, Acting Vice-Consul.**—Report on the Trade of Saffee for 1869. l. c., p. 617.

1075. 1871. **Gatell, Joachim.**—Description de Sous. Bull. Soc. Géogr. Paris, 6e Série, i., pp. 81–106, with a map of the district and a plan of Taroudant.

1076. 1871. **Beaumier, Aug.**—Lettre sur le Maroc. l. c., p. 131.

1077. 1871. **Seux, Dr. A.**—Mogador et son Climat. From 'Marseille Medical.' 8vo, pp. 35.

1078. 1871. **Kerhallet, C. Philippe de,** and **A. Le Gras.**—Instructions nautiques sur la côte occidentale d'Afrique, comprenant le Maroc, le Sahara et la Sénégambie. Paris: 8vo, Ministère de la Marine, No. 435. See No. 786.

1079. 1871. **Picatier, Ad.**—Exploits d'un Capitaine français dans le Maroc. Paris: 2nd edition, 8vo, pp. 108. (De la Martinière.)

1080. 1871. **San Martin, Antonio de.**—Los Riffeños. La Illust. Españ. y Americ. Madrid: pp. 574.

1081. 1871. **Sanches Valenzuela, Joaquin.** — Historia de los presidios menores de África, con interesantes noticias sobre el origen de los Árabes y su religión, descripción de la parte de la costa berberisca donde están situadas las plazas españolas, costumbres de los rifeños, breve reseña de las expediciones de España contra África y de las dominacionas antiquas en Berberia y parecer sobre los puntos que le deben conservar y de las reformas que en ellos es conveniente hacer. M.S. en la Bib. del Minis. de la Guerra. (Duro.)

1082. 1871. **Fritsch, Dr. K. von,** and **Dr. J. J. Rein.**—Notizen über den Handel von Mogador. Jahresbericht des Vereins für Geographie und Statistik zu Frankfurt a. M., 1871–72, pp. 52–57.

1083. 1871. **Salingré, E.** — Royal Prussian Expedition. — Gerhard Rohlf's Voyage in Africa, 1869; with 40 Photographs from Nature. Fol. Berlin. See also **Rohlf's, G.,** Afrika-Reise in 1869. In 40 Photographien nach der Natur, aufgenommen von E. Salingré. Fol. Berlin.

1084. 1871–77. **Collecion** de Libros Raroso Curioso, vol. xv. Españoles en Africa 1542, 1543, y. 1632. Madrid: 8vo.

1085. 1871. **Rohlfs, Gerhard.**—Uesan el Dar Demana. Das Ausland, 1871, No. 11, pp. 259–262, No. 12, pp. 272–278.

1086. ——— Fes, Hauptstadt von Marokko. l. c., No. 18, p. 420; No. 22, p. 505; No. 23, p. 543; No. 24, p. 568; No. 25, p. 586.

1087. ——— Consulatswesen in Marokko. l. c., No. 37, p. 880.

1088. ——— Politische Zustände in Marokko. l. c., No. 40, p. 942.

1089. ——— Die Religion der Marokkaner Globus xx. No. 20, p. 310; No. 22, p. 346; No. 23, p. 361.

1090. 1871. **"Ben Tarick."**—With the American Embassy from Tangiers to Fez. 'Dark Blue Magazine' (London): Sept, pp, 30–40.

1091. 1871. **Valenzuela, Sanches.** — Historia de los presidios menores de Africa: Melilla.

A MS. quoted by Ovilo (No. 1437, p. 105). He vouches for the author knowing all the customs of the Moors near the Spanish ports.

1092. 1872. **Maw, George.**—Notes on the Geology of the Plain of Morocco... with an appendix by R. Etheridge, 1872. 'Quarterly Journ. Geol. Soc.' vol. xxviii. (Jan. 10th) pp. 85–102. Plate illustrating the sections described. Discussion by John Ball, Sir Andrew Ramsay, D. Forbes, Sir W. W. Smyth, and Prof. Seeley.

This paper, contributed by Mr. Maw, is substantially the same as Appendix ii. to Hooker and Ball's "Tour in Morocco" (No. 1275), pp. 446–467, though the plates are different.

1093. 1872. **Nachrichten ueber Industrie,** Handel und Verkehr, aus dem statistischen Department des K.K. Handelsministerium. Vienna: 8vo. This publication, which is issued yearly, usually contains reports by the Austrian Representatives on the industry, trade and traffic of Morocco.

1094. 1872. **Wimpffen, Général de.**—L'expédition de l'Oued Guir. Bull. Soc. Géogr. Paris, Sér. 6, t. iii., pp. 34–52, with map. See also Nos. 1095, 1162, 1295.

[This also appeared in German: 'Militärische Expedition nach dem Ued Gír in Marokko, März bis Mai 1870.' Petermann, Geogr. Mittheilungen, 1872, vol. xviii. pp. 332–341. Map, No. 18.]

1095. 1872. **Kessler,** Capit. d'État-major.—Lettre à M. le Président de la Société. On the same subject, l. c., April, pp. 444–6.

This expedition took place in March and April 1870, and penetrated as far as Figuig in pursuit of fugitive insurgents from the province of Oran.

1096. 1872. **Primaudaie, Elie de la.** — Les Villes Maritimes du Maroc. Commerce—Navigation—Géographie comparée. Rev. Afr., vol. xvi., p. 105, et seq.

A very important work.

1097. 1872. **Beaumier, Auguste,** Consul de France à Mogador.—Tableaux récapitulatifs des Observations météorologiques faites au consulat de France à Mogador du 16 Août 1867 au 31 Décembre 1871. Bull. Soc. Géogr., Paris, 16me Sér. t. iv., pp. 150, and 308. See also Zeitsch. der Osterr. Gesellschaft für Meteorologie, viii., 1873, No. 1, pp. 7–8.

1098. ——— Le Cholera au Maroc. Sa marche au Sahara jusqu'au Sénégal, en 1868. Bull. Soc. Géogr. Paris, 6me Sér., t. iii., p. 287–305. With two interesting maps showing the course and extent of the invasion.

1099. 1872. **Fenton, Captain E. Dyne.**—Sorties from "Gib." in quest of Sensation and Sentiment. London: 8vo, pp. 478.

A collection of stories and sketches, only one of which—"The Story I heard at Tangier" (pp. 29–66)—entitles the book to a place in this list. It contains a sketch of the town full of phenomenal blunders. E.g. the natives are called "Turks," and the people described as smoking "opium."

1100. 1872. **Duveyrier, Henri.**—Historique des Explorations au sud et au sud-ouest de Géryville. Bull. Soc. Géogr. Paris, 6me Sér., t. iv. p. 225.

A map is also given, showing the routes of all the expeditions described between 1847 and 1870, several of which are within the frontier of Morocco.

1101. 1872. **Desjardins, Ernest.**—La colonie Romaine de Banasa et l'Exploration Géographique de la Mauritania Tingitana. Rev. Arch., xxiv., pp. 361–367, with map.

Explanation of an inscription forwarded by M. Tissot, which fixes the site of one of the principal Roman cities of Mauritania Tingitana, viz. **Colonia Aelia Banasa Valentia,** now Sidi Ali bou-Jenan.

1102. 1872. **Ferreiro.**—Informe al Almirantazgo acerca de la bahia de Lobos (boca del Draa). M.S. Archiv. del Ministerio de Marina. (De la Martinière.)

1103. 1872. **Lozano Muños, Francisco.**—Apuntes sobre Marruecos. Los tributos y la influencia de la batallas d'Isly y de Tetuán. Revista de España, t. xxvii., p. 462. (Duro.)

1104. ——— Organización Militar de Marruecos. Continuación de los apuntes publicados en la **Revista de España,** l. c. (Duro.)

1105. ——— Los tributos y la influencia de las batallas de Isly y de Tetuán, l. c.

1106. 1872. **San Javier, Viscondo de.**—El Peñon de Velez de la Gomera. La Illust. Españ. y Americ. Madrid: p. 651.

1107. 1872. **Lerchundi, Fr. José de,** Misionero franciscano observante en Tetuán.—Rudimentos del árabe vulgar que se habla en el imperio de Marruecos, con numerosos ejercicios y temas aplicados á la teoría. Madrid: 4to, y un apéndice separado con los temas. New edition, Tangier, 1891.

An excellent grammar of the Moghrebin dialect for those acquainted with Spanish, by the Chief of the Franciscans in Morocco. The same author has a Moghrebin Dictionary in preparation.

1108. 1872. **Reise** Deutscher Naturforscher nach Marokko, 1872. Petermann's Geogr. Mittheilungen, vol. xviii., p. 190.

1109. 1872. **Rein, J.**—Ueber einige bemerkenswerthe Gewächse aus der Umgebung von Mogador. Jahresbericht der Senckenbergischen naturf. Gesellschaft zu Frankfurt a. Main, 1872–73, pp. 119–131.

The species described are *Klemia pteroneura*, D. C., *Apteranthes Gussoniana*, and *Argania Sideroxylon*, R. and L. Dr. Rein (now Professor of Geography in the University of Bonn) and Baron Dr. K. von Fritsch (Professor of Geology in the University of Halle) visited the Atlas in 1872, ascending Tizi Tacherat on the 11th June. They found no traces of glaciers, and are of opinion that what Hooker and Ball took for such was simply the result of a mountain slide (Bergrutsch). But they found in two different valleys outcrops of rock-salt, which the English travellers had not observed. (Letter of Prof. Rein to Dr. R. Brown, March 16, 1891).

1110. 1872. **Maw, George**—A Journey to Morocco and Ascent of the Great Atlas. A lecture delivered before the Birmingham and Midland Institute. Ironbridge: 8vo, pp. 28 [no date, two editions].

1111. 1872. **Fritsch, Baron K. v.** and **Dr. J. J. Rein.**—Reise der Frankfurter Naturforscher ..... nach den Canarischen Inseln und dem Marokkanischen Atlas, 1872. Vorläufiger Bericht von Dr. K. v. Fritsch. Peterm., Mitth. Geogr., pp. 364, 367.

1112. 1872. **"Fas."**—Gibraltar's Value. London: 8vo.

Touches on the other side of the strait also.

1113. 1872. **Rohlfs, Gerhard.**—Eine Stadt in der Wüste Sahara. Unsere Zeit, hrsg. von Rud. Gottschall, N. F., 7 Jahrg., 24 Heft.

1114. 1872. **Rohlfs, Gerhard.**—Zeitschrift der Gesellschaft für Erdkunde zu Berlin. 7 Bd., 1 Heft, pp. 56–75.

1115. ——— Höflichkeitsformeln und Umgangsgebräuche bei den Marokanern, Globus xxii. N. 7, pp. 105–108.

1116. ——— Die Sahara der grossen Wüste. Das Ausland, Nos. 45–47, pp. 1057–1061; No. 46, pp. 1085–1089; No. 47, pp. 1111–1114.

1117. ——— Die Zahlzeichen der Rhademser, l. c., No. 29, pp. 695–696.

1118. 1873. **Perrier, Amelia.**—A Winter in Morocco. London: 8vo, pp. 365, with illustrations.

A lively and trustworthy narrative of a lady's winter residence at Tangier. The authoress does not pretend to know any other part of Morocco. Reviewed in 'Dublin University Magazine,' July (Vol. 82), pp. 126–7.

1119. 1873. **Wooldridge, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 483.

1120. 1873. **Hunot, Vice-Consul.**—Report on the Trade of Saffee. l. c., p. 486.

1121. 1873. **The Mediterranean Pilot.**—Published by the Hydrographic Office, Admiralty. Vol. i., 8vo.

At p. 48 is an account of the Coast of Morocco, from Cape Spartel to Almina Point, and at p. 104 that from Tetuan Bay to the frontiers of Algeria. A new edition was published in 1887.

1122. 1873. **Cruickshank, John.**—Tangier. Glasgow: 8vo.

Extracts from this pamphlet appeared in the 'Times of Morocco,' No. 181, *et seq.*

1123. 1873. **The African Pilot.**—Sailing directions for the West Coast of Africa. The first edition was dated 1849.

1124. 1873. **The West Coast of Africa,** Pt. i., from Cape Spartel to Sierra Leone. United States Hydrographical Office.

1125. 1873. **White, Consul.**—Report on the Trade of Morocco for 1871. Cons. Comm. Rep. received during 1872, Pt. i., p. 475.

1126. ——— Report on the Trade of Morocco for 1872. l. c., p. 915.

1127. 1873. **Dupuis, Consul.**—Report on the Trade of Dar-el-Baida. l. c., p. 479.

1128. 1873. **Stokes, Vice-Consul.**—Report on the Trade of Mazagan. l. c., pp. 481.

1129. 1873. **Carstensen, Vice-Consul.**—Report on the Trade of Mogador. l. c., p. 482.

1130. 1873. **Ball, John.**—Mountaineering in the Great Atlas. Lond. Alpine Journ. pp. 220–231.

1131. ——— Descriptions of some new Species, Sub-species and Varieties of Plants collected in Morocco. Journal of Botany, Sept., Oct., Nov. and December. Also separately, 8vo, pp. xxxii.

1132. 1873. **Koch, Carl, Dr.** — Beiträge zur Kenntniss Arachniden Nord-Afrikas, insbesondere einiger in dieser Richtung bisher noch unbekannt gebliebenen Gebiete des Atlas und der Küsten-Länder von Marocco. (Von

Fritsch und Reins Collection.) Jahresbericht der Senckenbergischen naturf. Gesellschaft zu Frankfurt, pp. 104–118. Also separately.

1133. 1873. **Dournaux-Dupéré, Norbert.**—La rôle de la France dans l'Afrique Septentrionale et la Voyage à Timbouktou. Bull. Soc. Géogr. Paris, 6me Sér., t. vi., p. 607.

The author gives a sketch of all that has been done for the exploration of the south, both in Algeria, Tripoli and Morocco; written as a preliminary study for his projected journey in the Sahara of Algeria, where he was killed in the following year.

1134. 1873. **Larousse. Pierre.**—Grand Dictionnaire Universel du XIXe Siècle. Paris: 4to. Article on Morocco, t. x., pp. 1232–1236.

1135. 1873. **Cosson, E. St. Charles.**—Note sur la Géographie botanique du Maroc. Comptes-Rendus de l'Acad. des Sc., Mars. Reproduced in Bull. de l'Association Scientifique, vol. xi., No. 279.

1136. ——— Same paper, but further developed. Bull. Soc. Bot. France, t. xx., p. 49.

1137. ——— Species Novae Maroccanae (chiefly Balansa's plants). l. c., pp. 239–261. (14th Nov.)

1138. 1873. **R.[amon] L.[on].**—España en Marruecos: Memoria administrativa. Revista de España, t. xxxvii., pp. 232–250, [Dated Tetuán, September, 1873.] (Duro.)

1139. 1873. **Chelli, Nicolás.**—Nuestro porvenir en África.—Engrandecimiento de Ceuta, decadencia de Gibraltar. Publicado por Acuerdo del Ayuntamento de Ceuta, Junio. Cadiz: Revista Médica, 8vo, pp. 60.

1140. 1873. **Lozano Muños, Francisco.**—Proclamación del Sultan Muley-Hassan. Revista de España. (De la Martinière.)

1141. 1873. **Dolmen** in Marokko. Globus xxiv., pp. 175–6. (Unsigned.)

1142. 1873. **Rohlfs, Gerhard.**—Mein erster Aufenthalt in Marokko und Reise südlich vom Atlas durch die Oasen Draa und Tafilet. Bremen: 8vo, pp. 468. 2nd edition, Berlin, 1881; 3rd, Norden, 1885. Trans. with Introduction by Winwood Reade, map and portrait: 'Adventures in Morocco and Journeys through the Oases of Draa and Tafilet,' 8vo, London, 1874.

1143. 1873. **Noll, F. C.**—Von Lissabon nach der Küste Marokko's und der Canaren. Westermann's Monatsschrift, pp. 36–55.

1144. 1874. **Shems ed-din Abu-Abdallah Moh'ammed.**—Manuel de la Cosmographie du moyen-age, traduit de l'arabe, 'Nokhbet ed-dahr-fi' adjaib-el-birr' wal-bah'r,' de Shems Ed-din Abou-Abdallah Moh'ammed de Damas, et accompagné d'éclaircissements par A. F. Mehren. Copenhague: 8vo.

1145. 1874. **Rohlf's Morocco.**—'Chambers's Journal.' Edinburgh: August 8th, 4th Series, pp. 501–504.

1146. 1874. **Hamilton, Lieut.-General Sir F. W., K.C.B.**—The Origin and History of the First or Grenadier Guards, from documents in the State Paper Office, War Office, Horse Guards, Contemporary History, Regimental records. London: 3 vols., 8vo, pp. xl. + 457; xviii. + 496; xxxiv. + 548.

Vol. i., chap. vii., p. 237, is an account of the occupation of Tangier and the Guards being sent there.

1147. 1874. **Günther, Albert.**—Notice of some new species of Fishes from Morocco. Ann. and Mag. of Nat. Hist., March, 2 plates.

An account of a small collection of marine and fresh-water fishes made by Dr. Rein and Dr. C. von Fritsch during their journey in Morocco. It contained four new species: one Serranus and three Barbels.

1148. 1874. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1872. Cons. Comm. Rep., Part i., p. 488.

1149. 1874. **Imossi, Vice-Consul.**—Report on the Trade of Laraiche. l. c., p. 489.

1150. 1874. **Redman, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 490.

1151. 1874. **Carstensen, Vice-Consul.**—Report on the Trade of Magador. l. c., p. 492.

1152. 1874. **Frost, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 494.

1153. 1874. **Hunot, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 497.

1154. 1874. **White, Consul.**—Report on the Trade of Tangier. l. c., p. 499.

1155. ——— Report on the Trade of Morocco. l. c., Pt. ii., p. 915.

1156. **Ebbarck, Ed.**—Histoire des Naufrages qui ont désolé la marine française, position difficile de l'Astrolabe et la prise de Mogador en 1845. Paris: 8vo, pp. 20. (De la Martinière.)

1157. 1874. **Bleicher, Dr.**—Lettre sur le Maroc. Cette: 8vo, pp. 13. From Rev. des Sc. Nat., Juin 1874.

The author was attached to the diplomatic mission to Mekinnes under M. Tissot; his observations more especially illustrate the anthropology and natural history of the country.

1158. 1874. Sur la Géologie des régions comprises entre Tanger, El Araiche et Meknes. Comptes-Rendus, t. lxxviii., pp. 1712–1716.

1159. 1874. **Pepys, W.**—A Ride in Morocco. 'Colburn's Magazine,' vol. cliv. p. 465.

1160. 1874. **Duveyrier, Henri.**—L'Afrique Nécrologique. Bull. Soc. Géogr. Paris, 6me Sér., t. viii. p. 560.

This gives a short account of all who have fallen victims to their endeavours to advance geographical knowledge in Africa, including, of course, the Barbary States. A very instructive map is added, showing the region in which each person travelled and the place of his death.

1161. 1874. **Mercier, E.**—Comment l'Afrique Septentrionale a été arabisée. Extrait résumé de l'histoire de l'établissement des Arabes dans l'Afrique Septentrionale. Paris: 8vo, pp. 18.

1162. 1874. **Gouvernement-Général de l'Algérie.**—Insurrection des Oulad Sidi Chick. Expédition de l'Oued-Guer dans le Maroc. Stat. Gén. de l'Alg. 1867–1872. Paris: 4to, p. 3.

Narrative of an Expedition from Algeria into Morocco in 1870, under the command of General Wimpffen. See also Nos. 1094, 1095, 1295

1163. 1874. **Dastugue, General.**—Hauts Plateaux et Sahara de l'Algérie Occidentale. Bull. Soc. Géogr. Paris, 6e Sér., t. vii., pp. 113 and 239.

The author visited the south-west of Algeria and the neighbouring part of Morocco in 1861 and 1862. The memoir here given is an outline of a more important work then in preparation.

1164. 1874. **Gravier, Gabriel.**—Le Canarien, Livre de la Conquête et Conversion des Canaries (1402–1422) par **Jean de Béthencourt,** Gentilhomme Cauchois; publié d'après le manuscrit original, avec introduction et notes. Rouen: 8vo, pp. lxxxiii. and 258, with modern and ancient map.

The original illuminated MS. is preserved by Madame de Mont-Ruffet in the Château de Carquelen, in Normandy. See No. 174.

De Béthencourt went to the Canaries in 1402 with the sole aim of taking possession of them and converting them to the Christian faith. He made several expeditions to the coast of Morocco.

1165. 1874. **Cosson, Ernest Saint-Charles.**—Sur les Euphebes cactoïdes du Maroc. Bull. Soc. Bot. France, t. xxi., p. 162.

1166. 1874. **Ceuta.**—Reglamento de las Compañias de Mar de Ceuta. Madrid: un Cuad. en 4to. (Duro.)

1167. 1874. **Idris el-Jorichi.**—Viaje que hizo al Guad Nun El-Hache, Idris el-Jorichi El-Fasi, Taleb del Consulado de España en Mogador en Agosto de 1874, para gestionar el vescate de los cautivos españoles; Traducido del árabe por **D. Antonio Maria Orfila** é inserto por apéndice en la presente conferencia. Madrid: 8vo.

A journey made to ransom the Spaniards held captive by the Sahara tribesmen.

1168. 1874. **Lange, Johannes.** See Schousboe. No. 480.

1169. 1874. **Bertherand, E. L.** See Schousboe. No. 480.

1170. 1874. **Rohlfs, Dr. Gerhard.**—Adventures in Morocco and Journeys through the Oases of Draa and Tafilet. With an introduction by Winwood Reade. London: 8vo, pp. 371, with map, and portrait of the author.

He adopted the garb and religion of the Moors, entered as surgeon in the service of the Sultan, and enjoyed the friendship of the Grand Sherif of Wazzan.

1171. 1874. **Mousson, A.,** late Professor in the University of Zurich.—Bemerkungen über die von Hrn. Dr. von Fritsch und Dr. Rein aus West-Morokko 1872, zurückgebrachten Land- und Süsswasser-Mollusken. Jahrbücher der deutschen Malakozoologischen Gesellschaft, i., 1874, 3 plates.

Of 54 species described, 26 are new.

1172. 1875. **Tissot, Ch.,** Ministre de France au Maroc.—Note sur l'ancien port d'el-Ghat (Oualidiya), with a plan in the text. Bull. Soc. Géogr. Paris: 6me Sér., t. x., pp. 67–71, with plan.

M. Tissot makes out the "very safe" port of El Ghait, between Saffi and Mazagan, mentioned by Edrisi, to be the Lagoon of Waladia (Oualidya), and not Ayir, as imagined by Renou. When M. Moüette was so unfortunate as to be captured, one of the pirate-ships ran for Waladia, and in Pellow's day (Nos. 366, 1945) it was regularly used. With a little improvement it might become the best harbour in Morocco.

M. Tissot held the post of Minister Plenipotentiary in Morocco from 1871 to 1876. He followed out all the Roman roads in that country, and this was the most fruitful period of his archaeological career. It was in the intervals between his excursions that he wrote his 'Maurétanie Tingitane' (Nos. 1213, 1251), at Tangier. His learning and acuteness in research shed lustre on France and the Diplomatic Service. His weakness as a critic was

the contempt he displayed for those less able than himself, or who had the misfortune to differ from him.

1173. 1875. **Tissot, Ch., &c.**—Ricerche di Carlo Tissot sulla Geografia comparata della Mauritania Tingitana.—Guido Cora's Cosmos, III. 1875. Nos. ii.–iii. pp. 119–120; Nos. iv.–v. pp. 184–186.

1174. 1875. **Ollive, Dr. C.**—Géographie Médicale: Climat de Mogador et de son influence sur la Phthisie. Bull. Soc. Géogr. Paris, 6me Sér., t. x. (Oct.), pp. 365–416.

The author gives a description and plan of Mogador, and meteorological observations extending over nine years.

1175. 1875. **Duveyrier, Henri.**—De Mogador au Djebel Tabayoudt, par le Rabbin **Mardochée Abi Serour.** Résumé du Journal de Voyage. l. c., p. 561.

The Rabbi was sent by M. Baumier, French Consul at Mogador, to explore the country to the S. of Mogador. An excellent map is given of his itinerary.

1176. 1875. **Tetuan.**—'Fraser's Maga.,' pp. 440–49 (signed 'R.') New Ser. vol. ii.

1177. 1875. **Irby, Lieut.-Col. L. H. L.**—The Ornithology of the Straits of Gibraltar. London: 8vo, pp. 236.

Two maps, one of Morocco. The introduction and body of the work contain many particulars about the coast ornithology of Morocco, including the notes of the late M. F. Favier, who, after a residence of thirty-one years at Tangier, died there in 1867.

1178. 1875. **Paladilhe, D.**—Coquilles Maroccaines. Paris: 8vo, with plates.

Chiefly descriptive of Dr. Bleicher's collection.

1179. 1875. **Ball, John.**—Description of some new Species, Sub.-species, and Varieties of Plants collected in Morocco. 'Journal of Botany,' June and July.

1180. 1875–1883. **Gorringe, Lt.-Commander Henry H., and Lieut. Seaton Schroeder, U.S. Navy.**—Coasts and Islands of the Mediterranean Sea. Bureau of Navigation, Hydrographic Office, Washington: 8vo.

Vol. i. pp. 266 to 295 relates to the Coast of Morocco.

1181. 1875–1881. **Gayangos, Don Pascual de.**—Catalogue of the MSS. in the Spanish language in the British Museum. Published by order of the Trustees, London: 3 vols.

These contain notices of many MSS. concerning Morocco.

1182. 1875. **British Order in Council** for the Regulation of British **Consular Jurisdiction** in Morocco, dated 4th Feb.—Based on the Treaty of the 9th December, 1856. Hertslet's 'Treaties,' vol. xiv. p. 413.

1183. 1875. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1873. Cons. Comm. Rep., received in 1874, Pt. ii., p. 815.

1184. 1875. **Imossi, Vice-Consul.**—Report on the Trade of Laraiche. l. c., p. 817.

1185. 1875. **Redman, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 820.

1186. 1875. **Puente, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 823.

1187. 1875. **Hunot, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 824.

1188. 1875. **White, Consul.**—Report on the Trade of Tangier. l. c., p. 826.

1189. 1875. **Frost, Vice-Consul.** — Report on the Trade of Rabat. l. c., p. 1401.

1190. 1875. **Beaumier, Acting Vice-Consul.**— Report on the Trade of Mogador. l. c., p. 1399.

1191. 1875–1881. **Fournel, Henri.**—Les Berbers. Étude sur la Conquête de l'Afrique par les Arabes, d'après les textes Arabes imprimés. Paris: 4to, 2 vols. pp. xx.+609; iv.+381.

An amplification of the author's first sketch of the subject, in 1857, q.v., which he much regretted having published. This is a most valuable and erudite work.

1192. 1875. **Gay, Jean.**—Bibliographie des ouvrages relatifs à l'Afrique et à l'Arabie. Catalogue méthodique de tous les ouvrages français et des principaux en langues étrangères, traitant de la géographie, de l'histoire, du commerce, des lettres et des arts de l'Afrique et de l'Arabie. San Remo: 8vo, pp. 312.

This contains a list of 87 works on Morocco, not always exact.

1193. 1875. **Cosson, Ernest St. Charles.** — Index plantarum in imperio Maroccano australi recentius a cl. Balansa et ab indigenis duobus sub auspiciis cl. Beaumier lectarum. Bull. de la Soc. Bot. de France, vol. xxii., January, pp. 51–77.

One of the two natives was Ibrahim Ammeribt, a Berber of Mogador: the other was the Rabbi Mordokhai (q.v.), a native of Akka, the first oasis in the Moroccan Sahara, south of Agadir (Cosson's 'Compendium,' vol. i. pp. 49–50.)

1194. 1875. **Bleicher, Dr. A.**—Un Voyage au Maroc. Rev. Sc., 2e Sér., t. viii., pp. 765–177.

The author accompanied M. Tissot, French Minister, who proceeded to Mekenes for the purpose of presenting his letters of credence to the new Emperor. It is divided into nine chapters: I. De Tangier à Meknès; II. La Capitale, l'armée et le Sultan; III. Le Retour, Ruines préhistriques et Romaines; IV. La Géologie; V. L'Histoire; VI. Le Commerce; VI. La Flore; VIII. La Faune; IX. Conclusion.

1195. 1875. **Direccion de Hidrografía.**—Derretero de las Costas occidentales de África, redactado en la .... con presencia de las publicaciones mas recientes. Comprende desde el cabo Espartel hasta Sierra Leona. Madrid: 4to, pp. 300, with views of the coast.

1196. 1875. **Abderraman-Ben-Mahomet.**—Carta sobre Costumbres de Marruecos enviadas desde Larache al diario de Madrid, El-Imparcial. (De la Martinière).

1197. 1875. **Diario del Sitio de Melilla,** por el emperador de Marruecos desde 9 de Diciembre de 1874 al 18 de Marzo de 1875. MS. en la Bibl. de Ingenieros. (Duro.)

1198. 1875. **Rosell y Torres, Isidoro.**—Una Excursion a Tanger. La Illus. Esp. y Amer. Madrid: p. 78.

1199. 1875. **P..... Viaje á Fez,** desde Tánger, de la embajada de Italia en mayo y junio de 1875. Madrid: La Iberia, July.

1200. 1875. **Cuevas, Teodoro de.**—Recaudador de la Aduana de Saffi. Memoria comercial de la tribu de Abel, remitida al Ministerio de Estado en 1875. Inédito en el Archivo de dicho Ministerio. (Duro.)

1201. 1875. **Rohlfs, Gerhard.**—Bei den Zeltbewohnern in Marokko. Globus, vol. xxvii., pp. 284, 312, 328.

1202. 1875. **Bleicher, Dr.**—Sur le Géologie du Maroc. Bull. Soc. Géologique Franç., 3me Sér., t. ii., pp. 315–316, and some notes in Tissot's 'Itinéraire de Tanger à Rabat.' Bull. Soc. Géog. Paris, 6me Sér., t. xii., 1876, pp. 225–294 (see No. 1194), and in Rev. Géologique, t. xii., pp. 176–177.

1203. 1876. **Leared, Arthur, M.D.**—Morocco and the Moors; being an account of Travels, with a general description of the country and its people. London: 8vo, pp. 370, with 18 maps and illustrations. It also contains the following appendices:—A. The climate of Tangier. B. The climate of Mogador, by M. Beaumier (No. 1097). C. Section between Mogador and the city of Morocco. D. The trade of Morocco. E. The drugs in use amongst the Moors. F. The marriage of the Sharif of Wazan. G. The captivity of Mr. Butler.

This work contains much information, industriously collected, though full of errors, along with a lively account of his own experiences; but he did not enter on any new ground.

A new edition was published in 1891, with a preface by Sir Richard Burton. pp. xv. and 354, map and illustrations. Some of the Appendices are omitted, The only addition is an introduction. Sir Richard's acquaintance with Morocco was limited to a winter passed in Tangier.

1204. 1876. **White, Consul.**—Report on the Trade of Morocco for 1873. Cons. Comm. Rep. received at F. O. in 1875, Pt. i., p. 165.

1205. ——— Report on the Trade of Tangier, 1874. l. c., p. 736.

1206. 1876. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1874. l. c., p. 727.

1207. 1876. **Imossi, Vice-Consul.**—Report on the Trade of Laraiche, 1874. l. c., p. 728.

1208. 1876. **Redman, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 731.

1209. 1876. **Beaumier, Acting Vice-Consul.**—Report on the Trade of Mogador. l. c., p. 732.

1210. 1876. **Frost, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 733.

1211. 1876. **Hunot, Vice-Consul.**—Report on the Trade of Saffi. l. c., Part ii., p. 1275.

1212. 1876. **Mazet, Du.**—Commerce entre l'Algérie et le Maroc. La Sebkha et les oasis de Gourara. L'Exploration, iii. Nos. 58 and 62, pp. 248 and 368.

1213. 1876. **Tissot, Charles,** French Minister Plen. at Tangier, subsequently ambassador at Constantinople and London (born 29th August, 1828, died, 2nd July, 1884).—Recherches sur la Géographie comparée de la Maurétanie Tingitane. Memoir read at the Acad. des Inscriptions et Belles-Lettres in 1875–76, and published in the Mém. présentés à l'Acad. par div. Sav. Étr., 1re Sér., t. ix., pp. 139–322. See also Duveyrier, 'Bull. de la Soc. Geog.' 7th March, 1879.

A most valuable paper, worthy of the author if he had written nothing else; it was the cause of his being elected a Corresp. of the Academy of Inscriptions. Accompanied by numerous plans, valuable maps and sketches, only a few of which were published. In three tables and on the maps the Greek, Latin and Arabic names of the various places are given. Most of these are summarised in Nos. 2, 4, 6, 7, 10, 11.

1214. 1876. **Tissot, Charles,** and **Broca, Paul.**—Sur les Monuments Mégalithiques et les Populations Blonds du Maroc. Rev. d'Anthrop., t. v., No. 3. Also published separately. Paris: 8vo, pp. 24, with a map.

The portion on the monuments is by M. Tissot, that on the blonde people—a fair race among the Berbers—is by M. Broca.

1215. ——— Itinéraire de Tanger à Rbat, avec Esquisse topographique d'une partie du Royaume de Fès. Bull. Soc. Géogr. Paris, 6me Sér., t. xii., p. 225, *et seq.*

The map which accompanies this memoir is described by Dr. Décugis (in 1878) as, "d'une exactitude remarquable."

1216. 1876. **Le Maroc.**—Notions Géographiques. Signed T. D. L'Explorateur, Paris, iii., p. 116, with map.

1217. 1876. **Renaud, G.**—René Caillié à Timbouctou. Rev. Géogr., No. 6, pp, 93–94.

1218. 1876. **Sabatier, C.**—Itinéraire de Figuig au Touat, et Description de la Vallée de l'Oued-Messaoura. Feuilleton du Mobacher, commencing No. 1265, 5th January, ending No. 1289, 2nd February.

He advocates a railway from Rashgun to the Valley of the Wad-Messaura, running in a south-east direction from Igli towards Tuat and Tidikelt, and describes the commercial relations between Morocco and Tlemsen.

1219. 1876. **Beaumier, Auguste.**—Itinéraire de Tanger à Mogador. Bull. Soc. Géogr. Paris, 6me Sér., xi., March, pp. 241–254, with admirably detailed sketch-maps.

1220. ——— Le Commerce au Maroc. Bull. Soc. Géogr. Bordeaux, 14 Jan. pp. 125–130.

1221. 1876. **Duveyrier, Henri.**—Sculptures Antiques de la Province de Sous. découvertes du rabbin Mardochée. l. c., t. xii., p. 129, with a plate from the squeezes of the Rabbi.

These represent the elephant, rhinoceros, giraffe and many other animals, some now extinct in this part of Africa. They are supposed to be the work of the Djuli race, who are mentioned by the Romans as Daratites. The elephant existed hereabouts in Pliny's day. (See Hanno and Pliny the Elder, Nos. 2, 7.)

1222. 1876. **Quijadlj, J.**—Carta de Marruecos—Descripción da la Visita qua hizo el Emperador a Casablanca in 1876. La Illustración Española y Americana. Madrid: t. ii., pp. 273.

1223. 1876. **Gomez de Arteche, José.**—Nieblas de la historia patria, Segunda Série. Madrid: 16mo.

One of the chapters, entitled 'Un proyecto estupendo,' treats of the object of the journey of Ali Bey el-Abbassi, promoted by the Prince of Peace, revealed in the correspondence of General Castaños.

1224. 1876. **Alvarez Perez-José,** Spanish Consul at Mogador.—Memoria sobre el comercio que se hace por el puerto de Mogador. Memorias comerciales por la Dirección general de Aduanas. El País del Misterio. Madrid: 8vo.

Contains an interesting account of the history and a description of Morocco and the independent tribes of Sus and Wad Nun.

1225. 1876. **Lozano Muñoz, Francisco,** Spanish Vice-Consul at Larache.—Memoria histórico comercial de la provincias de Larache, Benahuda Habbasi,

Benishara y Guazzan. Publicada por la Dirección general de Aduanas en las Memorias comerciales, pp. 125–153, [Duro, who adds "Es muy interesante."]

1226. 1876. **Castañeira, Ramon F.**—Noticias de la expedición de Mr. Donald Mackenzie al Cabo Juby y Costa adyacente, frente á Canarias, en 1876. Publicadas en La Academia, tomo i., pp. 171, 287 y 295.

1227. 1876. **Coello, Don Francisco.**—Memoria sobre el progresso de los Trabajos Geográficos, Marruecos. Bol. Soc. Geogr., Madrid, i., pp. 426.

1228. 1876. **Adamoli, Giulio.**—Viaggio al Marocco. Boll. Soc. Geogr. Ital., vol. xiii., pp. 630–646. Address before the Society, 3rd Dec. 1876.

Adamoli was sent to Morocco under its auspices, to ascertain whether it would be advisable to establish a factory on the coast between Capes Nun and Bogador. He gives much interesting information regarding that part of the country.

1229. 1876. **Kostenko, L. Th.**—Reise im Nördlichen Afrika. St. Petersburg: 8vo, pp. 240, with a map of Marokko, Algiers and Tunis.

1230. 1876. **Amicis, Edmondo de.**—Morocco. Milano: 4to, profusely illustrated; Seconda Edizione, 8vo, pp. 483, without illustrations. A French translation by Henri Belle, Premier Secrétaire d'Ambassade, published at Paris (in 'La Tour du Monde,' and separately) in 1882, 4to, pp. 405, with the same illustrations, 74 in number; also an edition in 16mo. An English translation by C. Rollin-Tilton, published in London in 1879, 8vo, pp. 406; also illustrated, entitled, 'Morocco, its People and Places.' There is a German edition, 'Marokko. Nach dem Italienischen bearbeitet von A. v. Schweiger-Leichenfeld,' Wien, 8vo, 1882, pp. 391; also a Dutch version.

The author accompanied the then Italian Minister, the late Commendatore Stefano Scovasso, on his embassy to the Sultan. It is of more literary than geographical value.

1231. 1876. **Taschek, C. R. v.**—Aus Tanger (Marokko). Wiener Jagd-Zeitung, 19 Jahrg. No. 23, pp. 655–659.

1232. 1876. **Alte Denkmäler an der Marokkanischen West-Küste.** Globus, xxix., pp. 375–6, with one illustration. (Unsigned.)

1233. 1876. **Eine Gesandtschaftreise nach Marokko.** Das Ausland, No. 37, pp. 721–5; No. 39, pp. 768–73.

1234. 1876. **Veth, Prof. P. J.,** and **Dr. C. M. Kan.**—Bibliografie van Nederlandsche Boeken, Brochures, Kaarten, enz. over Afrika. Utrecht: 8vo, pp. 98. Also, Tijdschrift van het sardrijksk-genootschap (Amsterdam), No. 8, pp. 358–385; an extremely imperfect list. A first supplement appeared in the Tijdschrift, (*ut supra*), 1877, vol. xiv., pp. 253–256.

1235. 1877. **Barbier de Meynard, C.,** et **Pavet de Courtelle.**—Maçoudi, Les Prairies d'Or, texte et traduction. Paris [1863–77]: 9 vols. 8vo.

1236. 1877. **Mackenzie, Donald.**—The Flooding of the Sahara; an account of the proposed plan for opening Central Africa to Commerce and Civilisation from the north-west coast, with a description of the Soudan. London: 8vo, pp. 287, with illustrations and map.

1237. 1877. **White, Consul.**—Report on the Trade of Morocco for 1875. Cons. Comm. Rep. rec. at F. O. in 1876. Pt. ii., p. 1385.

1238. ——— Report on the Trade of Tangier. l. c., p. 1415.

1239. 1877. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida. l. c., p. 1395.

1240. 1877. **Imossi, Vice-Consul.**—Report on the Trade of Larache. l. c., p. 1397.

1241. 1877. **Redman, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 1401.

1242. 1877. **Drummond-Hay, Consul.**—Report on the Trade of Mogador. l. c., p. 1403.

1243. 1877. **Frost, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 1411.

1244. 1877. **Hunot, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 1414.

1245. 1877. **Maroc,** Rapport Consulaire. Bulletin Consulaire français, fascicules 9th and 10th.

1246. 1877. **Halévy, Joseph.**—Rapport sur l'état des écoles dans les Communautés juives du Maroc. Bull. al. Israel. Paris: 1er Trim. (De la Martinière.)

1247. 1877. **Major, R. H.**—Discoveries of Prince Henry the Navigator. London: 8vo, with map. See also No. 1020.

The best account of his voyages and the voyages of his captains along the coast.

1248. 1877. **Feraud, L. Ch.**—Les Chorfa du Maroc.—Rev. Afr., t. xxi., p. 229, *et seq.*

An account of the Shereefs of Morocco, based on a work communicated to the author by a Taleb of Fez. Written by the Imam Ahmed bin Mohammed El-Achmaoui of Mecca.

1249. 1877. **Cosson, Ernest Saint Charles.**—Notes sur la Flore de la Tunisie, du Maroc et de la Cyrénaïque. Grisebach's 'Die Vegetation der Erde nach ihrer Klimatischen Anordnung,' etc., 2 vols. French ed. by Tchihatchef, vol. ii. pp. 150–156.

This paper is not in the much less satisfactory original German work.

1250. 1877. **Du Mazet.**—Excursion au Maroc. Revue Lyonnaise de Géographie, 1re Année, No. 17, 9 février 1878, pp. 198–204.

1251. 1877. **Tissot, C.**—Recherches sur la Géographie de la Maurétanie Tingitane. Paris: 4to, pp. 186, maps and plates.

Extracted from the 'Mem. présentées par divers savants à l'Acad. des Insc. et Belle-lettres' (No. 1213). The archæological discoveries of M. Tissot are of exceptional interest and value.

1252. 1877. **'Lahassen Mennum.'**

Ovilo (No. 1437) notes that this was the pseudonym of a journalist and employé of Spain in Morocco, who in this year "wrote an account of a Spanish Embassy in the 'Imparcial.'"

1253. 1877. **Gerome, J. L.**—Santon Marroquí. La Illustracion Española y Americana. Madrid: p. 377.

1254. 1877. **Fernández Duro, D. Cesáreo.**—El-Hach Mohamed el Bagdady (Don José María de Murga) y sus Andanzas en Marruecos. Conferencia pronunciada el dia de Mayo de 1877. Boll. Soc. Geográfica de Madrid, t. iii., pp. 117–149; 193–255.

At pp. 210–255 is a valuable **Bibliography,** 'apuntes para la Bibliografía Marroquí,' containing notices of 187 Spanish works and 243 in other languages.

Don José Maria de Murga y Mugartegui, like Ali Bey el-Abbassi and Joaquin Gatell, travelled as a Mohammedan in Morocco (in 1863), and published his work (No. 1029) in 1868. He made a second journey in 1873, but published nothing, though his notes are in existence. He visited Tetuan, Fez, Mequinez, Sallee, Casablanca, Merakish, &c., and so back to Tangier. He was preparing for a third journey in 1876, when he died at Cadiz, at the age of 49.

1255. **Fernández Duro, D. Cesáreo.**—Cautivos españoles en Cabo Blanco. Article published in the 'Ilustracion Española y Americana,' No. xxxiii., 8° Septr. (Duro.)

1256. 1877. **El Hach Mohamed El-Bagdády** (Don José Maria de Murga).—La Mujer Marroquí. Bol. Soc. Geogr. Madrid, iii., pp. 193. Continuation of No. 1254.

1257. 1877. **Urrestazu, Francisco de A. de.**—Viajes por Marruecos. Madrid: 8vo, pp. 230.

The author was born in Morocco, and his facts are said to be more minutely accurate than those of any modern Spanish writer.

1258. 1877. **Lozano Muñoz, Francisco.**—Crónica de Viaje de la Embajada española a la Ciudad de Fez el año de 1877. MS. en el Arch. del Ministerio de Estado, Madrid. (De la Martinière.)

1259. 1877. **Alvarez Perez, José,** Spanish Consul at Mogador.—Apuntes sobre el Argán de Mogador. Anales de la Sociedad española de Hist. Nat., t. v., cuad°. 1°. Madrid.

An article of six pages on the Argan, an oil-producing tree of Morocco.

1260. ——— Las Cacerias en Marruecos. Madrid: 8vo. Bibliot. de Inst. y Recreo.

1261. ——— Marruecos. Memoria Geografico comercial de la demarcacion del Consulado de Mogador. Boll. Soc. Geog. Madrid, t. ii., pp. 499–518.

1262. 1877. **Relación** del Viage de la embajada española á Fez, recibimiento por el Sultan en Abril 1877. El-Imparcial. Madrid: 24 May. (Duro.)

1263. 1877. **Monedero Ordoñez, Dionisio.**—Apuntes de un testigo de la batalla de Vad-Ras. Poema. Madrid. (Duro.)

1264. 1877. **Discusión** en la Sociedad Geografica acerca de la conveniencia de estudiar el territorio de Marruecos. Bol. Soc. Geogr. Madrid, t. ii., pp. 354, 520.

1265. 1877. **Coello, Don Francisco.**—Memoria sobre el progreso de los trabajos geográficos—Marruecos. l. c., p. 402.

1266. ——— Progreso de los trabajos geográficos—Marruecos. l. c., iii. p. 429.

1267. 1877. **Navarete, José.**—Desde Vad-Ras á Sevilla, Acuarelas de la Campaña de África. Madrid: Bib. de Instrucción y Recreo, 8vo, pp. 260. Amigo el autor de **el Bagdady** utiliza las noticias de su libro **Recuerdos Marroquíes** y otras verbales que le han servido grandemente para trazar los capitulos titulados **La Casa de Ben Jaldún, El Moro en Visita,** Saida, **Nur y Ramar en traje de gala, La Mora en casa y Sarao Morisco.** (Duro.)

1268. 1877. **Morokko,** Handel und Schifffahrt in den Haupthäfen von, in 1876. Preuss. Handelsarch., 1877, N. 20.

1269. 1877. **Pietsch, Ludwig.**—Marokko. Briefe von der deutschen Gesandtschaftsreise nach Fez in dem Frühling von 1877. Leipzig: 8vo.

1270. 1877. **Fritsch, K. von.**—Reisebilder aus Marokko. Mittheilungen des Vereins für Erdkunde zu Halle, 1877, 1878, 1879.

1271. 1877. **Rohlfs, Gerhard.**—Sigelmâssa und Tafilet. Z. d. Berlin. Ges. f. Erdkunde, No. 5, pp. 335–347. Also separately, Norden: 1887, 8vo.

1272. ——— Tekna und Nun. Petermann, Geogr. Mittheil., 23 Bd., pp. 422–426.

1273. ——— Gesandtschaften von und nach Marokko. Ausland, No. 32.

1274. 1877. **Lyst** van Journalen en verbalen van de Reizen naar de Middellandische Zee der schepen von oorlog van den staat, die noordkust van Afrika, etc. Tijdschrift van het K. Ned. aardrijkskundig genootschap. Amsterdam: vol. xiv., pp. 247–253.

1275. 1878. **Hooker, Sir Joseph, K.C.S.I.**, President of the Roy. Soc., &c., and **John Ball, F.R.S.**, &c.—Journal of a Tour in Morocco and the Great Atlas; with an appendix, including a sketch of the Geology of Morocco, by **George Maw**, F.L.S., &c. London: 8vo, pp. 489, with map of South Morocco, nine illustrations and twelve woodcuts in text.

The appendices are as follows:—A. Observations for determining altitudes of stations. B. Itineraries of routes from the city of Morocco through the Great Atlas. C. Notes on the geography of S. Morocco. D. On some economic plants of Morocco. E. A comparison between the Flora of the Canary Islands and that of Morocco. F. A comparison between the Mountain Flora of Tropical Africa and that of Morocco. G. On the mountain Flora of two valleys of the Great Atlas. H. Geology of the plain of Morocco and the Great Atlas. I. Moorish stories and fables. K. On the Shelluh language. L. On the Roman remains known as the Castle of Pharaoh, near Mulai Edris el-Kebir (by the late Dr. H. B. Brady and Mr. W. H. Richardson).

This journey was undertaken in 1871, and the account of its botany and geology is one of the most important works that has been written on the country.

The authors truly observe in their preface:—"Up to the date of our visit the Great Atlas was little better known to geographers than it was in the time of Strabo and Pliny."

The journey was short, but it was well planned and was especially marked by the vast stores of botanical knowledge which were obtained. Reviewed Nature, vol. xix., p. 366; Nation (Asa Gray), vol. xxviii., p. 232.

In various plates of the 'Botanical Magazine' Sir Joseph Hooker has figured some of the novelties collected in the Expedition.

1276. 1878. **Ball, John.**—Spicilegium Florae Maroccanae. Journ. Linn. Soc. (Botany), vol. xvi. (Parts 93–97), pp. 281–742, with 28 plates of new species.

The author—the well-known authority on the Alps—accompanied Sir Joseph Hooker on his Tour in Morocco. This work is described by this eminent botanist as one "which will ever be classical, both from its own merits and from having been the virgin Flora of that country," which, however, it is not. See Schousboe, No. 480. It is not published in book form.

1277. 1878. **Ramsay, Sir And.**, and **Jas. Geikie.** — On the Geology of Gibraltar. Quart. Journ. Geol. Soc., vol. xxxiv., pp. 505–541, with map and sections. Sir Andrew Ramsay discusses the same subject in the Proc. Roy. Institution, vol. xiii. No. vi.

There are some references to the raised sea beach at Tangier, in which an elephant's (*Elephas antiquus*) tooth and jaw were found.

1278. 1878. **Lachèse, Dr. Lanoaille.**—Les races latines dans la Berbérie septentrionale. Limoges: 4to, pp. 16.

1279. 1878. **Leared, Arthur, M.D.**—The Site of the Roman city of Volubilis. 'The Academy,' London (June 29, 1878), No. 321, p. 580. Reprinted in Appendix B. to No. 1317, pp. 69–86, with illustrations of the ruins, etc.

1280. ——— A Journey to Fez and Mequinez. Reports of British Association (Dublin Meeting), Section D.

1281. 1878. **"Sarcelle"** (C. A. Payton, H.M. Consul, Mogador).—Natural History Notes from Mogador. 'Field,' 23 Feb.

1282. ——— Sea-fishing round Mogador. l. c., 20th April.

1283. ——— Natural History Notes from Mogador. l. c., 28 June.

1284. 1878. **Drummond Hay, Consul.**—Report on the Trade of Mogador for 1876. Cons. Comm. Rep. rec. F. O. during 1877. Pt. ii., p. during 732.

1285. 1878. **White, Consul.**—Report on the Trade of Tangier. l. c., p. 739.

1286. ——— Report on the Trade of Morocco. l. c., pt. iii. p. 1411.

1287. 1878. **Lapeen, Vice-Consul.** — Report on the Trade of Dar-el-Baida (Casablanca). l. c., p. 1422.

1288. 1878. **Imossi, Vice-Consul.**—Report on the Trade of Laraiche. l. c., p. 1424.

1289. 1878. **Redman, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 1431.

1290. 1878. **Frost, Vice-Consul.** — Report on the Trade of Rabat. l. c., p. 1433.

1291. 1878. **Hunot, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 1436.

1292. 1878. **Leclercq, Jules.**—Souvenirs de Voyage—Tanger. Rev. Britannique, Nouv. Sér., t. vi., pp. 411–437. See also No. 1425.

1293. 1878. **Monin, H.**—Les premières Découvertes Maritimes. L'Infant Don Henri de Portugal. Rev. Géogr. (Drapeyron), t. iii., p. 417.

Dom Henri was with his father at the Siege of Ceuta in 1415, and there he had conceived the desire to pass Cape Nun, then considered the extreme limit of navigation on the coast of Morocco.

1294. 1878. **Goltdammer, F.**—Note Géographique et Commerciale sur l'Empire de Maroc. Paris: 8vo, pp. 12.

1295. 1878. **D'Oran à l'Oasis de l'Oued Guir.**—Spect. Milit., 4me Sér., t. iii., p. 215; t. iv., p. 72, with maps.

Account of General de Wimpffen's expedition within the Morocco frontier in the direction of Figig. The map is reproduced from the Bull. de la Soc. Géogr. Paris. See also Nos. 1094, 1095, 1162, 1295.

1296. 1878. **Des Portes et François,** Lieutenants de Vaisseau.—Itinéraire de Tanger à Fez et Meknès. Bull. de la Soc. de Géogr. Paris, 6 Sér., t. xv., p. 213–228, with map in text. Also separately, Paris: 8vo, pp. 16.

These officers accompanied M. de Vernouillet, French Minister in Morocco, on his Mission to Fez and Mekenes. They give the geographical positions of the places visited, and meteorological observations.

1297. 1878. **Décugis, Dr.,** Médecin prin. de la Marine.—Relation d'un Voyage dans l'Intérieur de Maroc en Mars et Avril 1877. l. c., t. xvi., p. 41, *et seq.*

The author also was attached to the Mission of M. de Vernouillet. He adds to his journal an "Aperçu rapide et général sur l'empire du Maroc."

Also a German translation: "Städtebilder aus Marokko. Nach dem Französischen, von **Heinrich Brunner**" (Geographische Nachrichten). Basel: Broch. in-8.

1298. 1878. **Camerano, L.**—Osservazioni intorno agli anfibi Anuri del Morocco. Atte Acc. Torini, vol. xiii., pp. 542–558.

Four species collected by the late Signor Scovazzi, Italian Consul at Tangier, from Tetuan, Laraiche, Casablanca, Rabat, Mazagan, Safee and Mogador.

1299. 1878. **Fernández Duro, Cesáreo.**—Exploración de una parte de la Costa N.O. de Africa en busca de Santa Cruz de Mar Pequeña. Bol. Soc. Geogr. Madrid, t. iv., p. 157; t. v., p. 17.

Attached to the latter Article are several appendices. p. 21. A note by Prof. Graeles on the Zoology and Botany of the voyage. p. 29. The situation of Santa Cruz de Mar Pequeña. pp. 33–64. Continuación de los apuntes para la Bibliografia Marroqui, publicados con la Biografía de el-Hach Mohammed-el Bagdády [D. José María de Murga]. See Nos. 1254, 1256

1300. 1878. **Viaje** a la Capital del imperio de Marruecos de una comision española el año 1800. l. c., t. v., p. 273–282.

The MS. here published was found in the Library of the Escurial, and bears the title "Noticia del Itinerario desde Tanger hasta la Corte de Mequinez," and it is followed by "Noticias Históricas de Fez."

1301. 1878. **El-Rif.**—Articulo descriptivo de la Costa con propuesta de lo que debierá harcerse para mejorar la situación y objeto de los Presidios de Africa. El-Pabellón nacional, Madrid, June.

1302. 1878. **Navarro, Manuel de.**—Memorio del movimiento Maritimo y Commercial en este puerto y de las ventajas que à España afrece. Mem. Com. de la Direcc. de Aduanas. Madrid: 8vo, p. 160.

The author was Spanish Vice-Consul at Casablanca.

1303. 1878. **Coello, Don Francisco.**—Memoria sobre el progresso de los trabajos geográficos — Argelia y Marruecos. Bol. Soc. Geogr., Madrid, iv., p. 457.

1304. 1878. **Galiano, Pelayo Alcalá.**—Memoría sobre la situación de Santa Cruz de Mar Pequeña en la Costa noroeste de Africa. Madrid: 4to, pp. 48, with a map.

1305. 1878. **Castellanos, Fr. Manuel Pablo.** — Descripción histórica de Marruecos y breve reseña de sus dinastías ó apuntes para servir à la historia del Magreb recapilados por. Santiago: 4to, pp. 336.

A useful volume by a Spanish padre long resident in Morocco; contains some bibliographical notes.

1306. 1878. **Padró, Ramón.**—Tipos de las Caravanas del Sáhara, según los apuntés traidos por la comisión del *Blasco de Garay* en el año de 1878. La Academia, June. (De la Martinière.)

1307. 1878. **Alvarez Perez, José.** — Vistas y tipos de la Costa del Sous, tomados del natural en la expedición del *Blasco de Goray*, año 1878. La Illustrac. Esp. y Americ., t. xiv., p. 15.

1308. 1878. **Adamoli, Giulio.**—Lettere del Marocco. Giorn. de Viaggi e Geogr. Comm. de Milano. L'Esploratore, Nos. 1, 2.

1309. 1878. "**Sarcelle**" [**Payton, C. A.**].—Christmas in Morocco. London Society, December, pp. 488–496.

1310. 1878. **Omboire, G.**—Le Maroche, antiche Morene mascherata da frane. Padova: 8vo. (De la Martinière.)

1311. 1878. **Pietsch, Ludwig.**—Marokko, Briefe von der deutschen Gesandtschaftsreise nach Fez im Jahre, 1877. Leipzig: 8vo.

1312. 1878. **Hellwald, Friedrich v.**—Die Afrikaforschung der Gegenwart unserer Zeit. Deutsche Revue der Gegenwart. New Ser., vol. i., p. 14–37; and 269–295.

This contains a general account of discovery in Africa from B.C. 500 to 1793. Discoveries in the region of the Atlas from the journey of the Danish Consul Höst in 1760, to that of Hooker in 1871, and in that of the Western Sahara from Carl Ritter in 1817 to Bou el-Moghdad in 1860.

1313. 1878. **Fritsch, K. von.**—Reisebilder aus Marokko. Mittheil. des Vereins für Erdkunde zu Halle, 1878, pp. 24–63.

1314. 1878. **Tangier,** Handel und Schifffahrt in 1876. Preuss. Handelsarchiv, No. 10.

1315. 1878. **Maroc,** Rapport Consulaire. Bull. Consul. français; fascicules 5th and 6th.

1316. 1879. **A Tour in Morocco.** — Based on Hooker and Ball's Tour, No. 1275. 'Chambers' Journal,' Sept. 13. pp. 577–9.

1317. 1879. **Leared, Arthur, M.D.**—A Visit to the Court of Morocco. London: 8vo, pp. 86. Map (same as in No. 1203) and illustrations.

This is founded on a paper read in 1878, at the Brit. Assoc. at Dublin. The author accompanied the Embassy sent by the King of Portugal, to congratulate the Sultan on his accession to the throne. Appendix A. contains an account of the campaign of 1578, in which Dom Sebastian of Portugal was killed. Appendix B. is a description of Volubilis. Appendix D. contains an itinerary of the journey from Tangier to Mekenes and Fez. Appendix E. is a narrative of an excursion to Tetuan.

1318. 1879. **Marokko,** Handel und Schifffahrt des Sultanats und seiner Haupthäfen in 1878. Preuss. Handelsarchiv, No. 16–29.

1319. 1879. **"Sarcelle" [Charles Alfred Payton,** H.M. Consul at Mogador]. —Moss from a Rolling Stone, or Moorish Wanderings and Rambling Reminiscences. [Portrait as frontispiece.] London: 8vo, pp. 506.

The portion of the work (mostly reprinted from the Field) which refers to Morocco is from pp. 1–226. This is chiefly concerning sport in Southern Morocco, but it contains the best account of the famine of 1878 which has been published.

1320. ——— Rough Shooting in Morocco. Field, 6th December.

1321. ——— Sunny Cruises in Moorish Waters. l. c., 13th December.

1322. 1879. **Villa-Amel y Castro José.**—Berberia en tiempo de Cisneros Bol. de Sociedad Geografica de Madrid, pp. 129–157.

1323. 1879. **Drummond Hay, Consul.**—Report on the Trade of Mogador for 1887. Cons. Comm. Rep. rec. F. O. during 1878, Pt. ii., p. 665.

1324. 1879. **White, Consul.**—Report on the Trade of Morocco. l. c., p. 676.

1325. ——— Report on the Trade of Tangier. l. c., p. 685.

1326. 1879. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida. l. c., Pt. iv., p. 1659.

1327. 1879. **Redman, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 1662.

1328. 1879. **Frost, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 1664.

1329. 1879. **Hunot, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 1668.

1330. 1879. **Basset, René.**—Poème de Çabi en dialect Chelha (Sous de Maroc). Texte, transcription et traduction française. Paris: 8vo., pp. 35.

A very curious production.

1331. 1879. **Kramer, Commandant.**—Du Trans-saharien par la vallée de l'Oued Messaoud. Bull. Soc. Géog. Oran, vol. i., p. 123, with map.

The same vol. contains other memoirs on the same subject.

1332. ——— Réfutation des Objections faites au tracé du Trans-saharien par l'ouest de l'Algérie. Compte-Rendu du 2e Congrès des Soc. de Géogr. 1879, à Montpellier, pp. 86–101.

A part of this line is certainly traced through Morocco, though it is the fashion to say that all the districts through which it will pass are independent of that empire.

1333. 1879. **Bulletin** de la Société de Géographie de la Province d'Oran. Commenced in 1879.

The Society was inaugurated on the 14th July, 1878. The Bulletin Trimestral contains many interesting articles on Morocco.

1334. 1879. **Foresta, Count A. de.**—La Spagna, Gibilterra e Tangeri. Bologna: 8vo, 2 pts.

1335. 1879. **Fernandez Duro, Don Césareo.**—Nuevas observaciones acerca de la situacion de Santa Cruz de Mar Pequeña. Bol. Soc. Geogr. Madrid, vol. vi., p. 193.

1336. 1879. **Tentativas Comerciales** en las regiones de Sus y Uad-Nun. l. c. vii., p. 263.

1337. 1879. **Galiano Pelayo Alcalá.**—Memoria sobre Santa Cruz de Mar Pequeña y las Pesquerias en la Casta Noroeste de Africa. Madrid: 8vo, pp. 79, with three maps.

1338. ——— Mas Consideraciones sobre Santa Cruz de Mar Pequeña. Madrid: 8vo, with map.

Captain Galiano's first statement regarding the Castle of Guadir and its connection with the Canaries having been questioned, he reprints his original treatise with additions.

1339. 1879. **Norman, C. B.** Fez. Encyclopædia Britannica, vol. ix., pp. 127.

1340. 1879. **Johnston, Keith.**—Africa [based on Hellwald's 'Afrika' in 'Die Erde und ihre Völker]. (Standford's Compendium of Geography and Travel). London: 8vo. The regions of the Atlas, Morocco, Algeria, Tunis and Tripoli, § 3.

1341. 1879. **Llana, Manual G.,** and **Tirso Rodrigañez.**—El Imperio de Marruecos, Antecedentes Historicos. Geografia—Razas—Religion—Estado Social—Instruccion—Fanatismo—Usos y costumbres—Organizaceon militar—Guerra de 1860—Tratados—Reflexiones finales.

This work is by the Editor of 'La Iberia,' a newspaper in which part of it appeared.

1342. 1879. **Gatell, Joaquin** ("Kaïd Ismael").—Viages por Marruecos al Sus Nun y Tekna. 8vo. (An appendix to the Bol. de la Soc. Geog. Mad.)

1343. 1879. **Fiter è Ingles, Joseph.**—Don Joaquin Gatell y Folch (El Kaïd Ismail) Biografia leida en la sesion inaugural de l'Associación d'Excursions catalana el 15 d'Octobre de 1879. Barcelona: 8vo, pp. 38, with a plate.

1344. 1879. **Codera y Zaidin, Don Francisco.**—Catedráticó de lengua Árabe en la Universidad de Madrid. Tratado de Numismática Arábigo-Española. Madrid.

This takes in Moorish currencies.

1345. 1879. **Martin, Luis Garcia.**—España en Africa, culpas ó faltas del Siglo xvii. que paga el xix. Bol. Soc. Geogr. Madrid, vii., No. 1, pp. 26–59 (15th April).

1346. 1879. **Adamoli, Giulio.**—Di alcuni Tentativi Commerciali nelle Provincie di Sus e Tecna. Boll. Soc. Geogr. Ital., No. 3, pp. 245–252, with map.

He gives an account of Mr. Mackenzie's attempt to establish a commercial settlement at Cape Jubi.

1347. 1879. **Amicis, Edmondo de.**—Le Maroc. Tour de Monde, vol. 37, pp. 145–224; vol. 38, pp. 97–160. Traduction (par H. B.) et gravures inédites.

Some of the illustrations are from the Italian edition; others are the composition of E. Bayard, G. Vuillier.

1348. 1879. **Fritsch, Prof. K. v.**—Reisebilder aus Marokko. Mitth. d. Vereins für Erdkunde z. Halle, pp. 12–34. Also Petermann, Geogr. Mitth., 1880, p. 72.

1349. 1879. **Maroc.**—Rapport Consulaire. Bull. Consulaire français, fascicule 9.

1350. 1879. **Kersten, L.**—Handel und Verkehr in West-Morocco. Geogr. Nachrichten f. Welthandel u. Volkswirthsch., p. 363.

1351. 1879. **Lenz'sche Expedition (Die).**—Reisebriefe. Mittheil. d. Afrikanischen Gesellschaft in Deutschland, vol. i., Nos. 4, 5, pp. 246–248, and 1881, vol. ii., No. 1, pp. 51–52; No. 2; No. 3; and some account in Proc. R.G.S. 1880, N.S., vol. ii., pp. 196, 518–520, and Zeitsch. Gesellsch. Erdkunde, Berlin, Feb. 7th, May 8th, and July 3rd, 1880.

1352. 1879. **Velain.**—Constitution géologique des îles voisines du littoral de l'Afrique, du Maroc à la Tunisie. Comptes-Rendus de l'Acad. des Sc., vol. lxxviii., p. 73.

1353. 1879. **Brady, Henry B.**—Marocco and the Moors: Fez, Mekinez, Rabat. A Lecture delivered before the Leeds Philosophical and Literary Society, Oct. 22nd, 1876. Reprinted from the Friends' Quarterly Examiner, Newcastle-upon-Tyne: 8vo.

1354. 1880. **Santa Cruz** de Mar Pequeña. Revista de Canarias (Santa Cruz de Teneriffe), tomo ii.

1355. 1880. **Wheatley, Henry B.**—Samuel Pepys, and the world he lived in. London: 8vo.

The third edition was published in 1889. 8vo, pp. viii. and 311. Chap. iv., pp. 63–76, Tangier.

Pepys (Nos. 545, 626) was intimately connected with Tangier during the twenty-two years it remained in the possession of the English.

1356. 1880. **Scott, Sir Sibbald David.**—The British Army, its Origin, Progress and Equipment, from the Restoration to the Revolution. London: 8vo. pp. 612.

This work gives an account of the British occupation of Tangier. Two previous volumes were published in 1868: they contain nothing about Morocco.

1357. 1880. **"Mark Twain" (Samuel L. Clemens).**—The Innocents Abroad. London: 8vo.; and in various other English, American and translated editions. (1st American issue, Hartford, 1869.)

Contains (Chapters viii., ix.) a visit to Tangier, the "facts" of which must not be taken too seriously.

1358. 1880. **Guedalla, H.**—Refutation of an anonymous article in the Jewish World, entitled "Secret History of Sir Moses Montefiore's Mission to Morocco in 1863–64." London: 8vo.

1359. 1880? **Historia** Patria: Sobre a expedicão de Tanger no anno 1437. Revista Litterarea, No. xxiii., pp. 425–528.

1360. 1880. **Poole, Stanley Lane.**—The Coins of the Moors of Africa and Spain and the Kings and Imáms of the Yemen, in the British Museum. Classes [of Fraehn] xiv. a—xxvii. Edited by **Reginald Stuart Poole.** London: 8vo, pp. lii.: 175, with 7 plates.

This forms vol. v. of the Brit. Mus. Cat. of Coins, and deals with the money of Morocco.

1361. 1880. **Colville, Capt.** (now Lt.-Col.) **H. E.**, Grenadier Guards.—A Ride in Petticoats and Slippers. London: 8vo. pp. 328. Maps and plates.

The author made a reconnaissance of the country between Fez and Ujda by the Valley of the Moluia, accompanied by his wife, disguised in Moorish dress. App. A. is a Memoir on the necessity of Morocco for the safety of Gibraltar. App. B. Itinerary from Fez to Ujda. App. C. Glossary of Moorish terms. App. D. Note on the Route Map. See also Globus, xxxviii.

1362. 1880. **Watson, Robert Spence.**—A Visit to Wazan, the Sacred City of Morocco, with map and 12 illustrations. London: 8vo, pp. 328.

The author was the first Christian, except Rohlfs, who had visited this city, the ancestral home of the well-known Shereef, one of whose wives is an English lady. The work is an interesting one. It led to many other travellers following his example, until Wazzan is now as commonly visited as Fez. In addition to this book Dr. Watson has published two articles on the "Crisis in Morocco" (Pall Mall Gazette, June 21st and 22nd, 1884).

1363. 1880. **Ginsburg, Rev. J. B.**—An account of the Persecution of the Protestant Mission among the Jews at Mogador, Morocco. London: for private circulation, 8vo. pp. 56.

The writer complains of the hostility of the natives and the want of support from the British consular authorities.

1364. 1880. **'Sarcelle' (C. A. Payton).**—Moorish Fish and Fisheries.—'Field,' 28 Feb.

1365. ——— Sporting Scrapes in Morocco. l. c., 24th April.

1366. ——— Sporting Notes from Mogador. l. c., 11th Sept., and 25th Dec.

1367. 1880. **Drummond-Hay, Consul.**—Report on the Trade of Mogador for 1878. Cons. Comm. Rep. rec. at F. O., in 1879, Pt. i., p. 461, and Pt. ii., p. 1382.

1368. 1880. **Lapeen, Consul.** — Report on the Trade of Dar-el-Baida, l. c., Pt. ii., p. 1376.

1369. 1880. **Redman, Vice-Consul.**—Report on the Trade of Mazagan. l. c., p. 1379.

1370. 1880. **Frost, Vice-Consul.**—Report on the Trade of Rabat. l. c., p. 1388.

1371. 1880. **Hunot, Vice-Consul.**—Report on the Trade of Saffi. l. c., p. 1392.

1372. 1880. **White, Consul.** Report on the Trade of Tangier. l. c., p. 1393.

1373. 1880. **Gasselin, Edouard,** Chancellor of the French Consulate in Mogador.—Dictionnaire Français-Arabe (Arabe vulgaire—Arabe gramatice), etc. Paris: 4to.

1374. 1880. **Rohlfs, Gerhard.** — Die Juden in Marokko. Vergl. Jüdisch Literaturblatt (reprinted from the Allgem. Augsburger Zeitung).

The substance of it is reproduced in Quid novi ex Africa, pp. 66–100.

1375. 1880. **Johnston, Keith.**—A Physical, Historical and Descriptive Geography. London: 8vo.

The fourth edition published in 1890, revised by E. G. Ravenstein. 8vo, pp. 490. The Barbary States, pp. 368–370; Morocco, pp. 370–371.

1376. 1880. **Mordokkhai (Mardochée) Abi Serour de Akka.** — Les Daggatoun, tribu d'Origine Juive demuerant dans le Sahara (traduit sur l'hebreu et annoté par Isidore Loeb). Bull. Alliance Israélite. Paris: 8vo. See No. 146.

1377. 1880. **Le Commerce au Maroc.**—Le Portefeuille diplomatique, consulaire et financier. Paris: No. 3, 19 Juin, p. 118; No. 6, 10 July, p. 266.

1378. 1880. **Castries, H. de.**—Notice sur la Région de l'Oued Draâ. Bull. Soc. Géogr. Paris, 6me Sér., t. xx., pp. 481–519, with a map of the Southern Provinces of Morocco.

1379. 1880. **Vendegies, Ch. d.**—De Cadix chez Ben-Achache. Cambrai: 8vo.

1380. 1880. **Fillias, Achille.**—Recits militaires. L'Expédition de l'Oued Guir, 1870. Alger: 8vo, pp. 32, with map.

1381. 1880. **Ollive.**—Commerce entre Timbouctou et Mogador. Bull. Soc. Géogr. Marseille, No. 1, p. 5–8.

1382. 1880. **Ralli, Stenning.**—From Mogador to Morocco. 'Good Words,' May and June, pp. 311–317 and 493–499. Illustrated.

1383. 1880. **Convenzione** concernente l' esercizio del deritto di **Protezione** al Marocco conchiusa tra l'Italia, l'Austria-Ungheria, la Francia, la Germania, la Gran Bretagna, il Marocco, i Paesi Bassi, il Portogallo, La Spagnia, gli Stati Uniti dell' Americá Settentrionale e la Suezia e Norvegia. Iuglio 3, 1880. Trattati e convenzioni, &c., vol. viii., p. 68.

Published also in French, German, Spanish and English, and reproduced in the United States' series of Treaties.

1384. 1880. **Kábilas del Rif.** l. c., t. viii., pp. 180–1.

1385. 1880. **Ferreiro, Don Martin.** — Memoria sobre el progreso de los trabajos geográficos en Marruecos. l. c., t. viii., p. 407.

1386. 1880. **Marokko,** Gestattung der Getreideausfuhr nach Europa. Deutsches Handelsarchiv (Gesetzgebung), June Heft. Handel und Schifffahrt des Sultanats und seiner Haupthäfen im. J. 1879, *ibid.* (Berichte), Nov. Heft. 1879.

1387. 1880. **Negociations** relative to the right of **Protection** in Morocco, from 18th Feb. to 19th July, 1879.—Parl. Paper 2707—Hertslet's Tr., vol. xv., p. 247. See also Marten's Nouv. Rec. Gén. de Tr., 2e Ser., t, vi., pp. 515–629.

These were held between Sid Mohammed Bargash and the representatives of the various European powers. The series of papers ends with the Treaty of Madrid of 3rd July, 1880.

1388. 1880. **Documents Diplomatiques** relatifs à la question de la **Protection** diplomatique et Consulaire au Maroc. Paris: folio, pp. 278.

The correspondence and protocols before and during the Conference of Madrid, 19th May–3rd July, with the Treaty of Madrid signed on the 3rd July, 1880.

1389. 1880. **Caussin de Perceval.**—Grammaire arabe vulgaire pour les dialects d'Orient et de Barbarie. New Edition. Paris: 8vo.

1390. 1880. **Morocco and the Moors.**—Review of De Amici's Morocco, Blackwood's Magazine, vol. cxxvii., May, pp. 607–623. Same article in Eclectic Review, vol. xcv., May, p. 21.

1391. 1880. **Rolleston, C.,** and **M. Schröder.**—Tetuan. Petermann's Geogr. Mittheil., vol. xi., p. 292.

1392. 1880. **Bleicher, Dr.**—Études de Géologie comparée sur le terrain quaternaire d'Italie, d'Algérie, du Maroc, etc. Association Scientifique, Congrès de Reims, 18th August, 1880.

1393. 1880. **Conring, Colonel Adolph von.**—Marroco مراكش الحمرة das Land und die Leute. Allgemeine geographische und ethnographische Verhältnisse. Verfassung. Städte. Land. Bewohner. Handelsbeziehungen. Produkte. Politische Verhältnisse. Europäer und deren Vertreter. Aus neuester eigner Anschauung geschildert. Berlin: 8vo, pp. viii.+334. With a map of the country and a plan of the city of Merakish (Morocco): the first very rough, the second copied from Lambert, No. 1024.

This book is chiefly remarkable for its blunders and the scandalous stories regarding the Consular and diplomatic staff with which the author thought fit to cram it. These libels were the theme of several questions in Parliament and some diplomatic correspondence.

A second edition was published in 1881, and a Spanish translation in 1881 (Marruecos, el pais y sus habitantes). Madrid: 8vo, pp. 362.

1394. 1880. **Maroc.**—Rapport Consulaire. Bull. Consul. français, fascicule 8.

1395. 1881. **Trotter, Captain Philip Durham,** 93rd Highlanders.—Our Mission to the Court of Morocco in 1880, under Sir John Drummond Hay, K.C.B., Minister Plenipotentiary and Envoy Extraordinary to His Majesty the Sultan. Illustrated from photographs by the Hon. D. Lawless. Edinburgh: 8vo, pp. 310. With map and 31 illustrations.

The mission went from Tangier to Fez, thence to Mekenes and Rabat, returning along the coast by Sla (Salli) Mehedia, El-Araish (Laraiche) and Azila.

1396. 1881. **Ball, John.**—General List of Plants collected on tour from Tangier to Fez by Miss Drummond Hay, 1880. Appendix A. to Trotter's

"Our Mission to the Coast of Morocco in 1880 under Sir John Drummond Hay," etc. (No. 1395). pp. 295–301.

This list comprises 168 species, and according to M. Cosson "est le principal document que nous possédions sur la flore encore très peu connue de cette partie du Maroc."

1397. 1881. **Mathews, Felix A., Consul, U.S.A.**—North-West Africa and Timbuctoo. Bull. Amer. Geog. Soc., No. 4, pp. 196–219. See also No. 1537.

1398. 1881. **"Sarcelle" (C. A. Payton).**—A Wild-goose Chase in Shiadma. Field. 18 June.

1399. ——— The Shooting Season at Mogador. l. c., 16th July.

1400. ——— Mackerel Fishing at Mogador. l. c., 15 October.

1401. 1881. **[Colgass, N.].**—A Peep at the Moghrebens. Three articles, Temple Bar, London, February, March, April, vol. lxi. (1) Tangier, pp. 241–9; (2) Tangier to Tetuan, pp. 377–383; (3) Tetuan, pp. 523–31.

1402. 1881. **Andree, Richard.**—Zur Volkskunde der Juden. 8vo, pp. 296, with map showing the relative density of the Jewish population in Central Europe.

A good account of the Jews in Morocco, pp. 195–199. He estimates their number at 200,000.

1403. 1881. **Regulations** respecting the mode of payment, &c., of the **Agrarian and Gate Taxes** ("L'impôt Agricole" et "la Taxe dite des Portes") in Morocco. Dated Tangier, 3rd March. Hertslet's Treaties, vol. xv., p. 253.

1404. 1881. **Lapeen, Vice-Consul.**—Report on the trade of Dar-el-Baida for 1879. Cons. Comm. Rep. received at F.O. during 1880, Part i., p. 799.

1405. 1881. **Imossi, Vice-Consul.**—Report on the British shipping at Larache for 1879. l. c., p. 801.

1406. 1881. **Redman, Vice-Consul.**—On the trade of Mazagan for 1879. l. c., p. 802.

1407. 1881. **Frost, Vice-Consul.**—On the Trade of Rabat for 1879. l. c., p. 806.

1408. 1881. **Hunot, Vice-Consul.**—On the Trade of Saffi for 1879. l. c., p. 810.

1409. 1881. **White, Consul.**—On the Trade of Tangier for 1879. l. c., Part ii., p. 1540.

1410. 1881. **Vernes d'Arlandes, Th.**—En Algérie à travers l'Espagne et le Maroc. Paris: 12mo, pp. 420.

1411. 1881. **Venegas, Pedro de Córdoba.**—Embajada á Marruecos de . . . . . , Año de 1581.

From a MS. in the library of the Royal Historical Academy of Madrid, entitled 'Relaçion de todo al embaxador Pedro Varegas de Cordova en el viage que hizo á la ciudad de Marruecos con çierta embaxada que su magestad le embio al rrei Muley Hamet rrei de Marruecos y Fez.' Vol. ix., No. 3 pp. 198–205. l. c. See Nos. 83, 1803.

1412. 1881. **El Berberisco.**—Spanish comic weekly (Ceuta). Began May 11th, but did not reach more than one issue.

1413. 1881. **Masset, A. du.**—Les Oulad Sidi Chick et les territoires insurgés de la Province d'Oran. Rev. de Géogr. Paris, t. viii., p. 451.

This tribe, though belonging to Algeria, has a habit of seeking shelter in Morocco after any of the insurrectionary movements to which it is so much addicted.

1414. ——— La Frontière Marocaine. l. c., t. ix., p. 444–451.

Describes the frontier as delimited by the treaty of 1845. He maintains that tranquillity in Algeria is impossible under it, and that the true limit is from the Moluia on the north to the Wad Gir or Wad Zig in the south.

1415. 1881. **Cherbonneau.**—Les Limites réelles de l'Algérie. l. c., Juillet.

1416. 1881. **Gourgeot, F.,** Ex-interprète principal de l'armée d'Afrique.—Situation politique de l'Algérie—Le sud—Bou Amama—Les Oulad Sidi Cheikhe—Figuig—Le Tell—Les Colons—Marabouts—Chorfa—Dyouad—Zenatza—Les Grands Chefs—Les Fellahs—Les Kranner—Tiyout—El Adred—Création d'une Makhezen—Les goums—Pouvoirs politiques, pouvoirs administratifs, &c. Paris: 8vo, pp. 190.

1417. 1881. **Marokko.**—Handel und Schifffahrt des Sultanats und seiner Haupthäfen in J. 1880. Deutsches Handelsarchiv, July Heft.

1418. 1881. **Maroc.**—Rapport Consulaire. Bull. Consul. français, fascicule 1.

1419. 1881. **Cosson, Ernest Saint-Charles,** Membre de l'Institut.—Compendium Floræ Atlanticæ seu expositio methodica plantarum omnium in Algeria necnon in regno Tunetano et imperio Maroccano hucusque notarum; ou Flore des États Barbaresques, Algérie, Tunisie et Maroc. Vol. i. Première partie—Historique et géographie. 8vo, pp. 265, maps.

He gives a list of about 285 Articles, containing the authorities he has quoted.

Vol. ii. published in 1883–87. Paris: 8vo, pp. cviii. and 367. Supplément à la partie historique et Flore des États Barbaresques.—Renonculacées—Crucifères; Addenda et Emendanda. See No. 1762.

1420. 1881. **Fillias, Achille.**—Campagne du Maroc—Tanger—Isly—Mogador, 1844. Alger, 8vo, pp. 40, with a sketch-map of the northern part of Morocco.

After the defeat of Abd-el-Kadir in 1843, he retired to Morocco. The French made an entrenched camp at Lalla Maghnia, and complications with the Sultan ensued. A squadron was sent to the coast of Morocco under the Prince de Joinville, and Tangier and Mogador were bombarded.

1421. 1881. **Bouty.**—État de la question de Trans-saharien. Bull. de la Soc. Géogr. Oran, Supp. No. 10, map.

This was read at the French Ass. for the Ad. of Sc. at Algiers in 1881. He describes the three tracks proposed:—1. That in surveying which Flatters lost his life. 2. That of M. Choisy, viâ El-Aghuat and Golea. 3. That of M. Pouyanne, see No. 1695, through Morocco to Senegal.

1422. 1881. **Bordier.**—Le tracé central du chemin de fer Trans-saharien. Bull. Soc. des Sc. Phys. Nat. et Climat. d'Alger, 1880, No. 3.

1423. 1881. **Normand, Ch.**—Le chemin de fer Central-africain. Rev. Géogr. Internat., No. 48, p. 235.

1424. 1881. **Bourde, P.**—La France au Soudan. Le chemin de fer Trans-saharien. Rev. des deux Mondes, Feb.

1425. 1881. **Leclerq, Jules,** President of the Brussels Geographical Society.—De Mogador à Biskra—Moroc et Algérie. Paris: 18mo. pp. 258, with map. A coast trip by the usual steamer route. Reviewed by Ad. F. de Fontpertuis in L'Économiste Français, 27 Aug., pp. 263–266, under the title "Le Maroc, ses populations, ses villes et ses ressources." See also L'Exploration, xi., No. 204, p. 81–87.

1426. 1881. **Marial, W.**—Les Marocains du Sud. L'Exploration, t. xii., No. 248, p. 746. Reprinted from 'L'Echo d'Oran.'

Gives a short account of the *Hamianes*, the *Oulad Sidi Cheikh*, the *Doui Menia* and of *Figuig*.

1427. 1881. **D'Ideville, Comte H.,** Ancien Préfet d'Alger.—Le Maréchal Bugeaud d'après sa correspondance intime et des documents inédites, 1784–1849. Paris: 8vo. 2 vols.

An English translation by Miss C. M. Yonge published in 1884, entitled, "Memoirs of Marshal Bugeaud from his private correspondence and original documents, 1784–1849." London: 2 vols., 8vo, pp. 363 and 365.

Chaps. vi. and vii. relate to the Morocco campaign, the battle of Isly, and the bombardment of Tangier and Mogador.

1428. 1881. **Jordana, D. José.**—Parte Oriental del bajalato de Tetuán, bajo el punto de Vista de la colonización. Madrid: from the Revista de España.

1429. 1881. ——— La Agrècultura de Marruecos. From the Revista Contemporánea.

1430. 1881. **Santoja, D. Antonio y Díaz Perona.**—España en el Riff, ó apuntes sobre las plazas españolas en la costa de África. Tudela de Navarra: 2 vols., 8vo.

1431. 1881. **Sabatier, Camille.**—La question du Sud-ouest. Alger: 8vo, pp. 70, with map.

The author gives an account, geographical and political, of the Sahara, and his ideas of the means of preventing future disturbances—one, of course, being a rectification of frontier.

Chap. i. treats of the Algerian Sahara. Chap. ii. of that of Morocco. Chap. iii. of the present condition of the Sahara and of the influence of religious sects. Chap. iv. of the means of preventing risings in the Sahara.

1432. 1881. **Jackson, James,** Archiviste-Bibliothécaire de la Soc. de Géographie de Paris.—Liste provisoire de Bibliographies Géographiques Spéciales. Paris: 8vo. pp. vi. and 340.

As far as Morocco is especially concerned, this only quotes the Bibliographical notices of Renou (No. 706), and Fernandez Duro (Nos. 1254, 1259).

1433. 1881. **Mahon.**—Commerce et Navigation de Mogador et Safy en 1879. Bull. consulaire français. Paris: 4to, pp. 1155.

The report in question occupies from p. 37–46.

1434. 1881. **Espada, M. Jiménez de la.**—España en Berbería. Bol. Soc. Geogr., Madrid, ix., No. 4, pp. 293–340. With map of the territories to the south of Morocco: "Copiado del general que en vista de los trabajos inéditos y mas recientes ha compuesto el Exmo. Sr. D. Francesco Coello."

1435. 1881. Conferencia del **Doctor Lens** pronunciada en la sesion extraordinaria del 10 de Marzo. l. c., x., p. 222–226.

1436. 1881. **Benites, Christ.**—Viaje por Marruecos el Desierto del Sáhara y Sudán al Senegal. l. c., x., p. 337; xi., p. 7.

1437. 1881. **Óvilo y Canales, D. Felipe.** — La Mujer Marroquí estudio social. Por . . . Illustrada con cromos al lápiz y dibujos á la pluma por Demócrito. Madrid: 8vo, pp. 215 and pp. 5 of Index (contents).

A very valuable (and outspoken) work by the Physician of the Spanish Legation at Tangier. The plates are life-like.

1438. ——— Estudios políticos y sociales sobre Marruecos. Madrid: 8vo. (From the Revista Contemporánea.)

1439. 1881. **Collaço, José Daniel.**—Colonias portugezas em paiz estrangeiro. Em Marrocos. Bol. Soc. de Geogr. de Lisboa. 2 serie, vi., p. 433–456.

1440. 1881. **Duveyrier, Henri.**—Historique des Voyages à Timbouktou. Bull. Soc. Géogr. Paris, 7me Sér., t. i., p. 195. Proc. Roy. Geog. Soc. 1881. N. S., vol. iii., pp. 316–317.

The first visit recorded is that of Paul Imbert, who died in slavery in Morocco in 1630. Major Laing followed from Tripoli in 1826, but was killed after reaching it. René Caillé (or Cailliè, the name being spelt both ways, the first being adopted some years before his death) in 1828 was more successful; he entered Africa from Senegal, and went N. through Morocco to Tangier. Barth in 1854 and 1855 started from Tripoli. The Rabbi Mordokkhai Abi Serur (1857), and Lenz (*ut infra*) followed, both from Morocco.

1441. 1881. **Armand, P.**—Voyage du Dr. O. Lenz. L'Exploration, t. xi. part 1.

This is an account of the voyage of Dr. Lenz from Morocco to Senegal. The portion especially devoted to the former country is from pp. 617 to 618.

1442. 1881. **Lenz, Oskar.**—Kurzer Bericht über meine Reise von Tanger nach Timbuktu u. Senegambia. Zeitsch. Gesellsch. für Erdkunde, Berlin, xvi., No. 4, pp. 272–293 (with map).

1443. ——— Voyage du Maroc au Senegal. Rev. de Géogr., t. viii., p. 371 *et seq.* with map.

This is the text of the address given by Dr. Lenz at the Soc. de Géogr. de Paris, on the 1st April, 1881 (*ut infra*).

Dr. Lenz gave a similar address at Madrid on the 10th March, at an extraordinary meeting of the Geographical Society there. Bol. Soc. Geogr. de Madrid, t. x., p. 222–226.

1444. ——— Voyage du Maroc au Sénégal. l. c., March pp. 199–226, with a map on which the routes of all the above-mentioned travellers are marked.

From Tangier Lenz made a preparatory journey to Tetuan, thence he proceeded to Fez, Mekenes, Rabat, Marakish, crossed the Atlas to Tarudant and Ilegh, and thence in a S.E. direction to Timbuktu. He returned by Senegambia. See Bull. de Soc. Géogr., Lyons, March 27, 1881, and Proc. R. G. S., 1881; N. S., vol. iii., pp. 317–318, 371.

1445. 1881. **Perrot, Léon,** officier de cavalerie.—Itinéraire de Geryville à Figuig et retour. l. c., Oct., pp. 274–302, with map.

The author, a cavalry officer, formed part of the Expedition to Figig under Colonel Colonieu in 1868. Attached to the memoir are two tables showing this route and that of Colonel de Colomb in 1866.

1446. 1881. **Dubois, Albert.**—L'Espagne, Gibraltar et la Côte Marocaine. Notes d'une touriste. Mons: 8vo, pp. 110.

1447. 1881. **Marokko,** Handel und Schifffahrt des Sultanats und seiner Haupthäfen in 1880. Deutsches Handelsarch., p. 558.

1448. 1881. **Kobelt, Wilhelm.** — Reisebriefe (Spanien, Oran, Nord-Marokko) Nachrichtsblatt der Deutschen Malakozoolog. Gesellschaft, 1881–1882.

These papers contain descriptions of *Hyalina tetuanenses*, *Leucochroa Debeauxii* and a number of other species, which like those in his 'Iconographie,' are in some cases pronounced by M. Bourguignat to be mere varieties of common forms, or in other instances species already described by him (Pechaud's 'Excursions Malacologiques,' pp. 18, 54, etc.).

1449. 1881. **Chavanne, J.**—Dr. Lenz's 'Forschungsreise von Marokko über Timbuktu nach Senegambien.' Deutsche Geographische Rundschau, vol. iii., No. 10, 11, with map.

1450. 1881. **Aldrich, T. B.**—A Day in Africa. 'Harper's Magazine,' vol. lxiv. (American edition); vol. ii. (European edition), pp. 241–250, pp. 346–355, with 12 illustrations.

An account of a trip from Gibraltar to Tangier. Pleasantly written, but amazingly inaccurate. The author is astonished at seeing no coin "less than three centuries old," and says that he picked up one "dated 1288." He was evidently unaware that the dates were those of the Hejira!

1451. 1882. **Playfair, Sir R. Lambert.**—Handbook (Murray's) to the Mediterranean its cities, coasts and islands, for the use of general Travellers and Yachtsmen. 2nd edition. London: 8vo, pp. 278. A 3rd Edition in 1890.

At pp. 1–8 is an account of the Coast of Morocco from Tangier to the frontier of Algeria.

1452. 1882. **Marokko.**—Herabsetzung des Einfuhrzolls auf Nahrungsmittel. Deutsches Handelsarchiv (Gesetzgebung), June Heft. Zeitweise Ausfuhr von Knochen. *Ibid.* July Heft. Konvention betr. Ausübung des Schutzrechts. *Ibid.* August Heft. Zeitweilige Eröffnung der Häfen Agadir and Assaca. *Ibid.* October Heft. Handel und Schifffahrt des Sultanats Marokko i. J. 1881. *Ibid.* (Berichte), December Heft.

1453. 1882. **Agadir,** Morocco. Naut. Maga. No. 8, pp. 600–602.

1454. 1882. **Howard Vyse, Mrs. L.** — A Winter in Tangier and home through Spain. London: 8vo, pp. 276.

Full of personalities which are only excusable in a volume "printed for private circulation."

1455. 1882. **Warren, Captain Fred., P., R.N.** — Gibraltar, is it worth holding? and Morocco. A Letter to Charles Magniac, Esq., M.P., President of the London Chambers of Commerce, and to the Chambers of Commerce of Great Britain. London: 8vo, pp. 27, 2 maps [no date on titlepage].

The author argues the exchange of Gibraltar for Ceuta as more defensible. A few copies of this pamphlet were also printed for private circulation in the course of the year 1881.

1456. 1882. **"Sarcelle" (C. A. Payton).** — Wild-fowling in Morocco. Field, 8th April.

1457. ——— A Glance at Agadir. l. c., 2nd Sept.

1458. ——— Sand-grouse and Shebbel. l. c., 30th Sept.

1459. 1882. **Waltham, Edward.**—Our Journey to Fez. London: 8vo, p. 47. Privately printed (Waterlow and Sons).

A very pleasant account of the journey to Fez by the author, his wife and son.

1460. 1882. **[Stuttfield, Hugh E. M.]**—Four Months in Morocco. Blackw. Maga., vol. 132, pp. 724–741.

Sporting experiences. The author visited only Tangier and Merakish.

1461. 1882. **Morais, H. S.**—The Daggatouns; a tribe of Jewish origin in the Desert of Sahara. Philadelphia: 12mo, pp. 14.

Practically a translation of Mordokkhai's Work, No. 1376.

1462. 1882. **Warner, Charles Dudley.**—Across Africa. Atlantic Monthly, vol. 50, pp. 165–176.

This journey "across Africa" was through the narrowest part of it, between Cape Spartel and the Bay of Tetuan!

1463. 1882. **Gilbard, Major** (Garrison Librarian).—A Popular History of Gibraltar and its institutions, and its neighbourhood on both sides of the Straits. etc. [Almost annual editions.] Gibraltar: sm. 4to, pp. 215, with plan of Gibraltar, &c. The "Trips to Barbary" occupy pp. 80–91. The latest issue is that for 1892, "The Gibraltar Directory and Guide Book," edited by Cavendish Boyle, C.M.G., and R. Bandbury.

1464. 1882. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1880. Cons. Comm. Rep. rec. at F. O. during 1881, Part i., p. 498.

1465. 1882. **Redman, Vice-Consul.**—Report on the Trade of Mazagan for 1880. l. c., p. 501.

1466. 1882. **Payton, Consul.**—Report on the Trade of Mogador for 1880. l. c., p. 504.

1467. 1882. **Frost, Vice-Consul.**—Report on the Trade of Rabat for 1880. l. c., p. 515.

1468. 1882. **White, Consul.**—Report on the Trade of Tangier for 1880. l. c., p. 519.

1469. 1882. **Basset, Réné.**—Relation de Sidi-Brahim de Massat dans le Sous. Bull, de la Soc. de Géogr. de l'Est, No. 3, pp. 524 and 707. See also No. 1720.

1470. 1882. **Beneden, Ch. van.**—Au Nord-Ouest de l'Afrique. Madères, les îles Canaries, le Maroc. Brussels: 18mo, pp. 113.

1471. 1882. **Prévost, Duclos.**—Une Aventure à Timbouctou. Paris: 18vo, pp. 396, with map.

1472. 1882. **Brown, Robert.**—The Peoples of the World. London: 4to, 6 vols., with many illustrations.

In vol. ii., pp. 202–205 the Berbers are sketched. In the same volume, p. 208, some account is given of the Moors. In vol. iii., p. 203, further reference is made to them. In vol. v., pp. 138–142, the Iberian theory is discussed. In vol. ii., p. 206, and vol. v., p. 111, the Tuaregs find a place. This work originally "The Races of Mankind" in 4 vols., and of which several editions have been issued, appeared in serial form, the first part being issued in 1881, and the last five years later.

1473. 1882. **Defournoux, Dr.**—Du Maroc en Tunisie. Compte-Rendu des Séances, Soc. de Géogr. Paris, 1882, No. 17, pp. 391–392 and 409–412.

1474. 1882. **M'rah Ould Bel-Hadgi.**—De Tlemçen au Maroc. Bull. Soc. de Géogr. Bordeaux, p. 269.

1475. 1882. **Castries, Capitaine de.**—Notes sur Figuig. Bull. Soc. Géog. Paris, 7me Sér., t. iii., p. 401–415, with map of the environs and two woodcuts in the text. Also Bull. Soc. Géogr. Oran, No. 14, p. 242–254.

1476. 1882. **Hamy, Dr. E. T.**—Notes sur les figures et les inscriptions gravées dans la roche à el-Hadj Mimoun, près Figuig. Rev. d'Ethnographie, t. i., p. 129–137, with five illustrations. [See also L'illustration, Journal universel, t. ix., p. 284, 3 July, 1847.]

1477. 1882. **Bonelli, Capitan Emilio.**—El Imperio de Marruecos y su constitucion. Description de su geografia, topografía, administracion, industria, agricultura, comercio, artes, religion, costumbres, razas que lo pueblan, y estudio de su importancia politica y militarmente considerada. Madrid: 4to, pp. 266.

1478. 1882. **Jordana y Morena, J.**—Parte oriental del Bajalato de Tetuán, bajo el punto de visita de la colonización. Boll. Soc. Géogr. Madrid, t. xii., pp. 110–142.

1479. 1882. **La Frontera Marroqui.** l. c., t. xii., p. 166.

1480. 1882. **El Sus, el Uad-Nun y el-Sáhara.**—l. c., t. xii, p. 513.

A review of the Article published by Mr. Felix A. Mathews, Consul-General, U.S.A., on the same subject.

1481. 1882. **Codrington, Gen. Sir W. G.**—Gibraltar and Ceuta. (Reprinted from the Times.) London: 8vo.

1482. 1882. **Crema, C. F.**—Missione italiana de Tangeri a Marocco e Mogador, diretta dal Ministro Comm. S. Scovasso. Guida Cora's Cosmos, vol. vii. (1883), pp. 292–317; vol. viii. (1884), pp. 11–13, 44–51, 103–112, 225–258. 2 maps, 7 fig.

1483. 1882. **Costa, D. Joaquin.**—El comercio español y la Cuestión de África. Madrid: 8vo.

1484. 1882. **Camara, R. da.**—Viagens em Marocos. Lisbon: 8vo.

1485. 1882. **Paulitschke, Dr. Philipp.**—Die Afrika-Literatur in der Zeit von 1500 bis 1750 n. Ch. Ein Beitrag zur geographischen Quellenkunde. Wien: 8vo, pp. 122.

Pages 38–75 contain the bibliography of North Africa, Egypt, Tripoli, Tunis, Algiers and Morocco. The titles are abbreviated, and there is no indication as to the size of the works.

1486. 1882. **Drude, Dr. Oscar.** Die Floristische Erforschung Nord-Afrikas von Marokko bis Barka. Petermann's Geogr. Mittheil., 28 Bd., pp. 143–150.

1487. 1882. **Rohlfs, G.**—Liegt ein Grund vor, die Städtebevölkerung von Marokko, Algerien, Tunisien und Tripolitanien als eine besondere zu betrachten und zu benennen? Ausland, No. 16, p. 301–307. Reprinted in "Quid novi ex Africa," pp. 131–145.

1488. 1882. **Lenz, Dr. Oskar.** Steinwerkzeuge aus der Sahara. Ausland, vi., No. 1, pp. 13–15.

1489. ——— Die Machazneyah in Marokko. Deutsche Rundschau f. Geogr., vol. iv.

1490. ——— Die Militärverhältnisse. Marokkos Gegenwart, ibid. 1882, No. 34.

1491. 1882. **Cosson, Ernest St. Charles.**—Illustrationes Floræ Atlanticæ, seu Icones plantarum novarum, rariorum vel minus cognitarum in Compendio Atlanticæ descriptarum. 8vo.

An Atlas of plates to illustrate the Compendium. (No. 1419.) It appears in parts and is still in course of publication.

1492. 1882. **Schweiger-Lerchenfeld, A. V.**—Ein Bollwerk des Islam, Marokko. Oesterreich. Monatsschr. f. d. Orient, No. 6, p. 81–88.

1493. 1882. **Maroc.** Rapport Consulaire. Bull. Consul. français, fascicules 11 and 12.

1494. 1882. **Newman, F. W.**—Libyan Vocabulary: An Essay towards reproducing the Ancient Libyan language out of four modern languages. London: 8vo, pp. 204.

1495. 1883. **Al-moghreb Al-aksa.**—Spanish (Tangier) Weekly. Founder and Editor, G. T. Abrines. Jan. 28, 1883. Enlarged, 1890.

This was the first newspaper started in Tangier. It has its own press, the first introduced into the country.

1496. 1883. **Webster, H. A.** (Librarian, Edinburgh University).—Morocco. Article in the Encyclopædia Britannica, 9th ed., vol. xvi., pp. 830–836, with an excellent map.

This article is a very careful summary by a writer without any personal knowledge of the country.

1497. 1883. **Langles, Louis Matthieu.**—Les Maures au Maroc. Bull. de l'Athénée Orient. Paris, 8vo, Nos. 3 and 4, pp. 226–256.

1498. 1883. **El Eco de Ceuta.**—Spanish Weekly (Ceuta). Editor, Garcia y Contillé. Feb. 15, 1883. It was suppressed in 1886: reappearing as **Africa.** No. 1690.

1499. 1883. **[Trotter, Major Philip Durham.]**—A Spring Trip to Morocco, From Tangier to Wazzan. Blackwood's Edin. Maga., vol. 134, pp. 438–459.

The journey of Major Trotter and the Visct. de la Martinière, in March 1883.

1500. 1883. **Cowan, G. D.,** and **R. L. N. Johnston.**—Moorish Lotus-leaves: Glimpses of Southern Morocco. London: 8vo, pp. 286.

Life in Mogador and its vicinity; Journeys to Merakish and Agadir, and a good chapter on Moorish cookery. The information is accurate. Reviewed in 'Athenæum,' 1883, pp. 438–9.

1501. 1883. **Cust, Robert Needham.**—The Modern Languages of Africa. A sketch of the modern languages of Africa, accompanied by a language map. London: 2 vols. 8vo, with maps. One of Trübner's Oriental Series. App. C., v. ii., pp. 467–517: A Bibliographical table of languages, dialects, localities and authorities containing about 1718 references. App. E., pp. 519–521: List of books of reference on general subjects, about 74 references. App. D., pp. 539–546: Alphabetical list of Authors quoted, about 483. There is also a list of 202 works relating to the modern languages of Africa.

1502. 1883. **"Sarcelle" (C. A. Payton).**—Among the Azlimza. Field, 13th Jan.

1503. ——— Shooting near Mogador, 1882–83. l. c., 29th July.

1504. ——— At Agadir again. l. c., 29th July and 18th Aug.

1505. ——— Bass-fishing at Mogador. l. c., 15th Dec.

1506. 1883. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1881. Cons. Comm. Rep. rec. at F. O. during 1882, Pt. I., p. 584.

1507. 1883. **Redman, Vice-Consul.**—Report on the Trade of Mazagan for 1881. l. c., p. 587.

1508. 1883. **Frost, Vice-Consul.**—Report on the Trade of Rabat for 1881. l. c., p. 590.

1509. 1883. **Payton, Consul.**—Report on the Production of Gum Euphorbium. l. c., p. 110.

1510. ——— Report on the Trade of Mogador for 1881. l. c., p. 213.

1511. 1883. **Hunot, Vice-Consul.**—Report on the Trade of Saffi for 1881. l. c., p. 1573.

1512. ——— Report on the Production of Gum Euphorbium. l. c., p. 112.

1513. 1883. **White, Consul.**—Report on the Trade of Tangier for 1881. l. c., p. 1056.

1514. 1883. **Maroc.**—Rapport Consulaire. Bull. Consul. français, fascicule 4.

1515. 1883. **Postel, R.**—En Tunisie et au Maroc. Paris: 12mo, pp. 217, with illustrations by Dr. L. M. Reuss.

1516. 1883. **La Cavalerie** et l'Artillerie du Maroc. Rev. Scient. (Rev. Rose), t. 31, p. 383. Extracted from the Rev. Militaire de l'Étr., rédigée à l'État-Major Général du Ministre de la Guerre.

1517. 1883. **Ideville, Henri d'.**—Trente-deux ans à travers l'Islam, 1832–1864. Correspondent, t. 132, p. 32–65.

A review of the forthcoming work of M. Léon Roche. See No. 1575.

1518. 1883. **Basset, René.**—Les Manuscrits arabes de deux Bibliothèques de Fas. Bull. Corresp. Afr. Alger., 8vo, Fasc. vi., Nov. et Dec. 1882, p. 366.

The libraries of Fez have been supposed to be the richest in Arabic literature which exist, and it has even been said that the missing books of Livy are in the Mosque of Karouin. This list was obtained from Fez by M. Ordéga, French Minister, and though manifestly incomplete, containing only 240 vols., goes to prove that the value of the libraries in question is greatly exaggerated.

Sir John Drummond Hay in vain offered rewards for any European MSS. in Fez. (No. 424.)

1519. 1883–1889. ——— Mission scientifique en Algérie et au Maroc. Bull. de la Soc. de Géogr. de l'Est, Nancy, 4e trimestre *et seq.*, No. 3.

1520. ——— Notes de Lexicographie Berbère. Paris: 8vo. pp. 62, reprinted from the Journ. Asiatique. See also Nos. 1620, 1687, 1849.

This contains a vocabulary of the Rif dialect, compiled by the author from natives of that country whom he met at Tlemçen.

1521. ——— Relation de Sidi Brahim de Massat dans le Sous, traduite sur le texte Chelha et annotée. Paris: 8vo, pp. 33. A Spanish edition in 1886. No. 1720.

The author says of this work: "C'est un des rares monuments de la langue Berbère, qui n'ont pas été empruntés à des sources Arabes." It was written at the request of Mr. Hodgson by a Taleb of Massat in the Sus, in the Berber and Arabic languages, and contains an account of that country and the neighbouring provinces, with information regarding their history, arts and commerce. See also No. 716.

1522. 1883. **Le Réveil du Maroc.** — French (Tangier) Weekly. Begun July 14, 1883. The founder and first editor was Levi A. Cohen, assisted by Abraham Pimienta. After his death it was conducted by Lucien Bucau and A. de Kerdec Chény, the latter of whom is the present "Rédacteur en Chef." Enlarged Jan. 1885.

This paper has its own press, at which No. 1861 was printed.

1523. 1883–1889. **Slane, Le Baron de.**—Catalogue des Manuscrits Arabes de la Bibliothèque Nationale, Paris. 2 parts only published, 4to, pp. 656.

The following are more especially connected with Morocco:—

No. 1575. Encyclopédie d'Al-Nowaïri. Ce volume commence par le sixième باب du cinquième قسم du cinquième فنّ. Cette partie renferme: 1. Histoire de la Mauritanie depuis la conquête musulmane jusqu'à la chute de la dynastie Almohade, &c.

No. 1576. Encyclopédie d'Al-Nowaïri . . . renfermant . . . courtes notices consacrées aux princes qui régnèrent . . . à Salé.

No. 1577. Extraits de l'Encyclopédie d'Al-Nowaïri: 1. Histoire des Almohades d'Espagne et d'Afrique et de la conquête de la ville de Maroc. . . . 3. Passage interpolé relatif au Sultan Aboû Yoûsof Ya'qoûb, mort à Salé.

No. 1588. عيون التواريخ. *Sources historiques*, par Ibn Schâkir Fakhr al-Dîn Mohammad al-Kotobê. 8me vol. (fol. 27, v°.) 'Histoire de la Mauritanie.'

No. 1868. الانيس المطرب روض القرطاس في اخبار ملوك المغرب وتاريخ مدينة فاس *Le Compagnon qui fait le Charme, du Jardin de Qartâs*, ou Histoire des rois de la Mauritanie, ainsi que de la ville de Fez, par Ibn Abi Zar' (زرع) Aboû 'l-Hasan Ali ibn Mohammad.

Tel paraît être le véritable titre de cet important ouvrage, qui a été traduit en allemand par Dombey, en Portugais par le P. Moura, en français par Beaumier, et publié, avec une traduction latine, par Tornberg. Le Jardin public appelé Qartâs avait été créé dans le voisinage de Fez par Zîrî ibn Atîya, souverain de cette ville et chef de la grande tribu des Maghrawa, qui porta lui-même le surnom de Quartâs et dont le règne se prolongea jusqu'en 391 de l'hégire. See Nos. 26, 465, 554, 646, 871.

No. 1871. عقد اللآلى المستضيئة, *Collier des perles brillantes.*

Opuscule dans laquelle on démontre l'authenticité de la généalogie d'Idrîs, fondateur de la dynastie des Idrîsides. L'auteur raconte l'histoire de ce prince et donne un courte description de Fez.

No. 1873. الحلل الموشّية في ذكر اخبار المرّاكشيّة, *Robes de Couleur ou histoire de la ville de Maroc.*

No. 1880. فتوح افريقية المغرب, *Conquête de la Mauritanie* par les Musulmans. Attributed to Aboû 'l-Hasan Bakri.

No. 1892. Histoire de la ville de Ghadâmès . . . Mauvaise compilation . . . . 5. (fol. 64) Histoire de Maulây Solimân, Empereur du Maroc, 1787–

1788. 6. (fol. 72, v°) Notice topographique et historique de la ville de Fez, tirée d'un ouvrage d'Ahmad ibn 'Abd Allah al-Barnoûsî.

No. 2297. *Le fruit des efforts dans la négociation d'un traité de paix et dans la guerre sainte par le littérateur de la dynastie hâschimide (du Maroc) et le Secrétaire de Les Commandements obéis et respectés, le jurisconsulte Sidî Ahmad ibn al-Mahdî al-Ghazzâl al-Fâsî.* Relation d'une Mission diplomatique près de la cour d'Espagne en 1179 de l'Hégire (1765–1766) dont fut chargé le susdit par Aboû 'Abd Allah Mohammud ibn 'Abd Allah, Empereur du Maroc.

No. 2327. مسالك الابصار في ممالك الامار, *Sentiers à parcourir des yeux dans les royaumes à grand Capitales.* Grande Encyclopédie géographique, historique et biographique par Sehihâb al-Dîn al-'Omarî de Damas, mort en 749 A.H. (1346–1349) . . . renferme des notices sur les poètes Maghrebins.

1524. 1883. **Bonelli, Capitan D. Emilio.**—Observaciones de un viaje por Marruecos (with an excellent map of Morocco). Bol. Soc. Geogr. Madrid, t. xiv., pp. 7–39. Also separately, Madrid : 8vo, pp. 36, 1883.

1525. 1883. **Fernandez Duro, Cesario.**—El puerto de Ifni en Berberia. l. c., p. 119.

1526. ——— Viajero español en Marruecos. l. c., p. 384.

1527. 1883. **Cuevas, D. Teodoro de.** —Estudio general sobre Geografía, usos agrícolas, historia, política y mercantil, administración, estadística, comercio y navegaceón del Bajalato de Larache y descripción de la ruinas del Lixus Romano. l. c., t. xv., pp. 70, 167, 338 and 417; t. xvi., pp. 31, 232, 365 and 425.

1528. 1883. **Schaudt, Jakob.** — Wanderungen durch Marokko. Zeitschrift d. Gesellsch. f. Erdkunde zu Berlin, xviii., Nos. 4–6, pp. 290, 304, 393–411. These journeys were made in 1880.

1529. 1883. **Lenz, Oskar.** — Vorläufige Mittheilung über geol. Verhält. in Marokko. Mittheil. Afric. Gesellsch., 1883.

1530. ——— Miknássa und die Ruinen von Volubilis. Oesterreich. Rundschau, i., No. 1.

1531. ——— Beiträge zur Kenntnis der Tertiärbildungen in Nord- und West-Afrika. Verh. d. k.k. Geolog. Reichsanstalt, No. 14, pp. 225–231.

1532. ——— Tetuan und die Landschaft Andschira . . . Aus allen Welt., t. xv., Nos. 1 and 2.

1533. ——— Reise von Tanger nach Fas, der Residentz des Sultans von Marokko. l. c., No. 3, pp. 65–74.

1534. 1883. **Kobelt, Wilhelm.** — Tetuan bei den Säulen des Hercules. Deutsche Touristen-Zeitung, Nos. 1 and 2.

1535. 1883. ——— Nach den Säulen des Hercules. Bericht über die in Sommer 1881 im Auftrage der Rüppell-Stiftung unternommenen Reise. Bericht der Senckenbergischen Gesellschaft, 1882–3, pp. 89–242 & 1–248. Also reprinted in two parts. 8vo. Frankfort a. M., paging *ut supra.*

The parts relating to Morocco, valuable for its conchological notes, are Chapters xi., xii. (Tangier to Tetuan.)

1536. 1883. **Bonansa, D. Pascual de.**—Memoria sobre la actual situación y necesidades de Ceuta. Madrid : 8vo.

1537. 1883. **Matthews, Felix, U.S. Consul General.**—Ueber die Hülfsquellen der Nordwestküste Afrika's. Mitth. Geogr. Ges. in Lübeck. Hft. 2–3, p. 42 (trans.). No. 1397.

1538. 1883. **Die Juden** in Miknâsa. Judisches Literaturblatt, xii. (Zur Lageder, in Demnat, Marokko). Jeschurun, N. F., ii., n. 48.

1539. 1883. **Haliburton, R. G.**—Notes on Mount Atlas and its Traditions. A paper read at Montreal in 1882. Salem: 8vo.

1540. 1883. [**Payton, C. A.**] Morocco Fisheries. (Introduction to Morocco Exhibit. International Fisheries Exhibition Catalogue.)

1541. 1883. Moorish Fisheries. London: 8vo (for the International Fisheries Exhibition).

1542. 1883. **Pechaud, Jean.** — Excursions Malacologiques dans le nord de l'Afrique de la côte d'Algérie à Tanger. Fasicule No. 1, pp. 112. (No more published.) Paris: 8vo.

Chiefly critical upon Dr. Kobelt's species, which, like many described in his Iconography, are affirmed to be old forms under new names.

1543. 1883. **Grammont, H. D. de,** and **L. Piesse.**—Un manuscrit du **Père Dan.**—Les Illustres Captifs—Histoire Générale de la vie, des faits et des aventures de quelques personnes notables, prises par les infidèles Musulmans. Rev. Afr. v. 27, p. 11, *et seq.* finished vol. 28, p. 67. Also separately, Alger: 8vo, pp. 83.

This interesting MS. was found in the Bibliothèque Mazarin; it consists of 261 folio leaves, bears the No. 1919, and contains an account of various captives taken by the Algerines, with a few brought into the same plight by the Moroccans.

1544. 1883. **Marokko.** Verlängerung der Oeffnung des Hafens Agadir und zeitweilige Schlieszung des Hafens Assaca. Deutsches Handelsarchiv (Gesetzgebung), January Heft. Handel und Schifffahrt des Sultanats Marokko i. J. 1882. *Ibid.* (Berichte), October Heft.

1545. 1884. **Tissot, Charles.**—Géographie Comparée de la Province Romaine d'Afrique: Exploration Scientifique de la Tunisie. Paris: 4to, 2 vols. and atlas. Vol. i., pp. viii., 667; vol. ii. (edited by Salomon Reinach from the late author's MS.) pp. xxxiv., 868 (each volume indexed separately). Atlas, plates and maps, xxii.

Though specially on Tunisia, this magnificent work contains many valuable notes on the ethnology of Morocco.

1546. 1884. **Andrews, W. H. C.**—Southern Morocco, Sus and the Ait Bou Amran. London: 8vo, pp. 40, with map.

1547. 1884. **"Sarcelle" (C. A. Payton).** — Grey Mullet Fishing. Field, 7th June.

1548. 1884. ——— Shooting near Mogador. l. c., 14th June.

1549. 1884. ——— The last Cruise in Ramadan. l. c., 27th Sept.

1550. 1884. **Sauvaire, H.**—Voyage en Espagne d'un Ambassadeur Marocain (1690–1691) traduit de l'arabe par . . . . Paris: 8vo, pp. 252.

This is the translation of an imperfect MS. in the National Library of Madrid, and of another in the possession of Señor de Gayangos, which appears to be a copy of the other. The MS. in the Madrid collection is entered in the Catalogue as "Viage á España de un Embajador enviado por Muley Ismael á

Carlos II., y observacions que hace en todo lo que vió. Viage hecho por los años 1680 á 1682." The death of Pope Alexander VIII. and the taking of Mons by the French, both of which events are related by the Moroccan Ambassador, prove, however, that he was in Spain in 1691, and must have embarked at Ceuta before the end of 1690. His name and the object of his journey are both unknown. The narration of the journey ends suddenly at Toledo, and is continued by a narrative of the conquest of Spain by Tarik and Musa ebn Nosair. The nameless envoy appears to be exceptional among his order in Morocco by keeping a diary of his travels. Nevertheless, there are in the Library of Algiers two copies of a journal by Abu'l Abbâs Ahmed bin El-mahdi El-Ghezzâl, Nos. 26 and 1229 of the Catalogue.

1551. 1884. **[Reid, T. Wemyss.]** – France and Morocco. Standard (London), June 3rd and 30th.

These two letters—signed "One who Knows"—give a clear semi-official account of the troubles in Morocco through the intrigues of M. Ortega and the Sherif of Wazzan.

1552. 1884. **Warren, Capt. Frederick Pelham, R.N.** — Morocco. Fortnightly Review, August, pp. 186–198.

1553. 1884. **Martinière, H. de la.**—Progress of Journey of. Proc. Roy. Geogr. Soc., p. 421.

1554. 1884. **Lapeen, Vice-Consul.**—Report on Trade of Dar-el-Baida for 1882. Consular Reports received at F. O. during 1883, Pt i., p. 607.

1555. 1884. **Redman, Vice-Consul.**—Report on the Trade of Mazagan for 1882. l. c., p. 611.

1556. 1884. **Frost, Vice-Consul.**—Report on the Trade of Rabat for 1882. l. c., p. 614.

1557. 1884. **Hunot, Vice-Consul.** — Report on the Trade of Saffi for 1882. l. c., p. 617.

1558. 1884. **White, Consul.**—Report on the Trade of Tangier for 1882. l. c., Pt. ii., p. 1459.

1559. 1884. **Bizemont, V. de.**—La France et le Maroc. L'Exploration, xvii., p. 853.

1560. 1884. **Delavaud, L.**—Notes sur le Maroc. l. c., xviii. p. 446–451.

1561. 1884. **Los Intereses de Espana en Marruecos.** — Discorsos pronunciados por los Señores D. Francesco Coelio, D. Joaquin Costa, D. Gabriel Rodriguez, D. Gomersindó de Azeárate, D. Eduardo Saavedra y D. José de Carvajal en el assamblea celebrado en el Teatro de la Alhambra el dia 30 de Marzo de 1884 por la Sociedad española de Africanistas y Colonistas. Madrid: 8vo, pp. 112. Commented on in an article entitled 'Francia en Siria y España en Marruecos.' (Estrella de Occidente, 1891). See Reveil du Maroc, Tangier, April 1–9, 1891.

1562. 1884. **Duveyrier, Henri.**—Liste de Positions Géographiques en Afrique (Continent et Isles). Paris: 4to, 1884 *et seq.*

1563. 1884. **Castonnet des Fosses, H.,** Avocat à la Cour d'Appel de Paris.—Le Maroc, ses relations avec l'Europe et sa Situation actuelle. Rev. de Droit International et de Législation Comparée. Bruxelles et Leipzick: vol. xvi., pp. 213 and 491.

The author advocates the rectification of the Algerian frontier and the extension of Spanish influence and territory about the **Presidios.** His account of modern politics is very prejudiced.

1564. 1884. **Castonnet des Fosses, H.,** Avocat à la Cour d'Appel de Paris. Le Maroc. L'Exploration, tome xviii., pp. 105 and 140. The same subject.

1565. 1884. **Chavagnac, Le Comte de.**—Le Chérif de Wazzan, son caractère, son influence, les intérêts français au Maroc. Bull. Soc. Géogr. Comm. Paris, 1884–85.

1566. 1884. **Blanchère, René de la.**—Malva, Mulucha, Molochatch; étude d'un Nom Géographique. Bull. de Corresp. Afr., iii., p. 136.

1567. 1884. **Marokko.** Berichtigungen des Zolltarifs. Deutschen Handelsarchiv (Gesetzgebung), November Heft.

Mazagan: Handel und Schifffahrt, 1883. *Ibid.* (Berichte), May Heft.
Larache: Handel und Schifffahrt, 1883. *Ibid.*, July Heft.
Mogador: Handel und Schifffahrt, 1883. *Ibid.*, October Heft.
Saffi: Handel und Schifffahrt, 1883. *Ibid.*, November Heft.
Rabat: Handel und Schifffahrt, 1883. *Ibid.*, November Heft.

1568. 1884. **Levinck, Madame Anne.**—L'Oasis de Figuig. Rev. de Géogr., t. xv., p. 401 *et seq.*

The authoress says: "J'y entrée, mais je l'avoue, j'y peu séjourné." She made a journey from Geryville.

1569. 1884. **Foucauld, Le Vicomte de.**—Voyage au Maroc. Comptes-Rendus Soc. Géogr. Paris, No. 13, pp. 372–375.

1570. 1884. **Expédition hydrographique** sur les Côtes du Maroc en 1854. Bull. Soc. Géogr. Paris, 7me Sér., t. v., p. 227.

1571. 1884. **Canal, J.**—La frontière Marocaine. Bull. Soc. Géogr. d'Oran, No. 21, pp. 83–86 and 91–94.

In No. 22 the author gives an instructive map, showing the manner in which he maintains that the frontier of Morocco should be rectified in the interest of France, by adopting the line of the Muluia.

1572. 1884. **Bouty, M.**—Nouvelle démonstration de la possibilité du chemin de fer Trans-saharien. Bull. de la Soc. de Géogr. et d'Arch. d'Oran, 1884, No. 21, pp. 87–90.

This is based on a recent notice published by M. Pouyanne on the region between Tuat and Timbuktu.

1573. 1884. **Valbert, G.**—Le Maroc et la politique européenne à Tanger. Rev. des deux Mondes, 1er Dec., p. 681. An excellent article founded on the then unpublished journals of M. de Foucauld. See No. 1842.

The writer sets forth moderately and fairly the views of the three great nations regarding this country: that of England, whose interest it is to retain the *statu quo;* of Spain, who has possessed Ceuta since 1580, and might have added to her possessions in 1860 (had not the other Powers, chiefly England, intervened); and of France, who sighs for a delimitation of her frontier and the rich but turbulent oases of the South.

1574. 1884. **Mathieu, J.**—Le Maroc.—Bull. Soc. Géogr. Marseille, t. viii., p. 147–155.

1575. 1884. **Roches, Léon,** Ministre Plénipotentiaire.—Trente-deux ans à travers l'Islam. (1832–1864.) Paris: 2 vols. 8vo, pp. 500, 503.

Vol. ii.: Livre ix., Campagne du Maroc; Livre x., Mission à Paris et à Tanger. At p. 451 is the "Délimitation de la frontière du Maroc."

1576. 1884. **Lanier, L.**—L'Afrique. Choix de Lectures de Géographie, accompagnées de Résumés d'Analyses, de notes explicatives et bibliographiques, et ornées de 57 vignettes, de 9 cartes tirées en couleur et de 33 cartes intercalées dans le texte. Paris: 12mo, pp. x. and 920.

Pp. 42–86 regarding Morocco.

1577. 1884. **Derenbourg, Hartwig.**—Les Manuscrits Arabes de l'Escurial. Paris: Publications de l'école des Langues Orientales vivantes. 1st vol., 8vo, xliii.+525.

1578. 1884. **Cervera Baviera, Capt. D. Julio,** Teniente de Ingenieros.—Geografía Militar de Marruecos. Barcelona: 16mo, pp. 192, with eight plates and one map.

This is one of the publications of the Revista Cientifica Militar. At pp. 15–18 is a list of the Authorities quoted.

1579. 1884. **Carvajal, José de.**—Los Intereses de España en Marruecos. Discurso pronunciado en la reunion publica de Africanistas y Colonistas de 30 de Marzo de 1884. Madrid: 4to, pp. 39. A reprint of one of the speeches in No. 1561.

1580. 1884. **Coello, Fr., J. Costa, &c.**—Intereses de España en Marruecos. Madrid: 4to, pp. 112.

1581. 1884. **Giralt, J. R.**—El Porvenir de España en el Sahara. Barcelona: 8vo. pp. 26, with map.

1582. 1884. **Marruecos** por M. Castonnet des Fosses. Bol. de la Soc. Geogr. de Madrid, t. xvii., pp. 20–35.

A Notice of M. Castonnet de Fosses' Article in the 'Exploration' (No. 1563), considered of extreme interest for Spain, as showing clearly what are French aspirations in Morocco, and expressing the opinion of the Geographical Society of Madrid on the subject.

1583. ——— **La Politica Hispano Marroqui** y la opinión pública en España. l. c., p. 36–58, with a map of the frontier between Morocco and Algeria.

Petitions sent by numerous Societies in Spain to the Cortes begging that a vigorous impulse may be given to Spanish politics in Morocco.

This subject is concluded in t. xviii., 1885, pp. 94–106.

1584. 1884. **España y Francia** en Marruecos. l. c., pp. 61. Discussion on the projected rectification of the frontiers of the two countries.

1585. 1884. **Un ex-Diplomatico.**—La questione del Marocco. Nuovo Antologio ii., Ser. ii., t. 45, pp. 663–676.

1586. 1884. **Diaz y Rodriguez, D. Manuel.**—Guía de Marruecos, compendio geografico del pais, etc., publicade en el folletín de 'La Correspondencia Militar.' Madrid.

1587. 1884. **El-Arisch,** die Handelsverhältnisser der Provinz der Sultanat Marokko. Oesterreich. Monatsschr. f. d. Orient, pp. 71. (De la Martinière.)

1588. 1884. **Scobel, A.**—Reiseskizzen aus Nord-west Afrika. Das Ausland, No. 14. (De la Martinière.)

1589. 1884. **Reise der Franzosen nach Marokko, 1882.** N. Militar B. xxv., p. 9. (De la Martiniere.)

1590. 1884. **[Anon.]** Führer durch Spanien nebst Marokko. Wien: 8vo, pp. 174.

1591. 1864. **Zehden, C.**—Tanger. Deutsche Rundschau f. Geogr., vi., No. 11, pp. 481–490.

1592. 1884. **Lenz, Oskar.**—Tetuan und die Landschaft Aschera. Aus aller Welttheilen, vol. xi., p. 1. Reise von Tanger nach Fas. Ib. p. 65. Fas die Residenz des Sultans Muley Hassan. Oesterreich. Monatsschr. f. d. Orient, 1884. No. 4.

1593. ——— Timbuktu: Reise durch Marokko, die Sahara und den Sudan, ausgeführt im Auftrage der Afrikanischen Gesellschaft in Deutschland, in den Jahren 1870 und 1880. 2 vols. Leipzig: 8vo, with 57 engravings and nine maps, pp. xvi., 430, 408. In French, "Timbouctou au Maroc, au Sahara, et au Soudan, par ... trad. par Pierre Lehautcour." Paris: 2 vols. 8vo, pp. 467 and 438, 45 engravings and 1 map.

The first volume is entirely upon Morocco, and forms one of the best existing résumés of our knowledge of that country.

1594. 1884. **Morocco.**—London Chamber of Commerce Journal, p. 179.

1595. 1884. **'The Times of Morocco.'**—English Monthly (Tangier); E. E. Meakin, editor from its commencement, July 5, 1884; also Budgett Meakin (Sept. 1886 to Sept. 1890, with intermissions). Weekly from Jan. 14, 1886. Doubled, 1889.

This is the only English paper in Morocco. It has its own press, and has printed several works, *e.g.* No. 2012.

Among the more important descriptive articles, the greater number of them by Mr. Budgett Meakin, are Tangier: Nos. 1, 2, 9, 41, 43, 84, 169, 170, 171; Laraiche, No, 272; Fez, Nos. 174, 176; Casablanca, No. 47; Mazagan, No. 48; El K'sar el Kebir (Alcasar), No. 231; Rabat, Nos. 59, 173; Salli, Nos. 165, 166, 168; Saffi, Nos. 137, 138, 139; Assaka, No. 45; Mogador, Nos. 144, 145; Merakish (Morocco City), Nos. 159, 162, 181; Mekenes, Nos. 20, 209; Zerhun or Mowlai Edris town, No. 184; Timbuktu, Nos. 90, 91, 92, 93; Perejil Island, No. 108; Wazzan, Nos. 196, 197. Feasts and Fasts:—*Jewish:* Day of Atonement, No. 50; Tabernacles, No. 51; Hanuca, No. 61; Passover, No. 25; Purim, No. 69; Circumcision, No. 5; Funerals, No. 5; Pentecost, No. 83. *Moorish:* Yôm el 'Aashur, No. 49; El Mûlud en Nebi, No. 57; El 'Aid el Kebir, Nos. 9, 44, 95; Ramadán, Nos. 13, 82; Festival of the Learned, Nos. 87, 88.——Tangier as a Health-Resort, Nos. 5, 15, 18, 81, 99, 100; Jews of Morocco, Nos. 109, 110; Christianity in Morocco, Nos. 78, 79 (Missions). Food in Tangier, No. 96; Mahdis of Morocco, No. 206; Domestic Architecture, Nos. 47, 180, 186, 198; Kasbah Hamdush on the Tensift, No. 130; Sheshuan (visit subsequent to that of Mr. Harris, No. 1808), Nos. 224, 225, 233; Commerce Nos. 29, 30; Native Doctors, No. 229, 230; Sus Country, Nos. 20, 21, 22, 23, 24; Mowlai Hasan's Expeditions, No. 168; An Adventurer in Morocco (Abd Allah ben Ali), No. 128; Saints of Morocco, No. 130, 131; Sus Cloaks, No. 191; Yakub el Mansur, No. 187; A Moorish Governor, No. 126; Slipshod way of transacting business, No. 133. Education in Morocco: Moorish and Jewish, Nos. 47, 173, 52 (Jews at Tetuan), No. 37 (Mogador), No. 84 (Spanish at Tetuan). Mueddins, No. 64; Rivers shoaling up, No. 70; Pilgrims, Nos. 110, 208, 209; Hawking, No. 83; Agriculture, Nos. 61, 76, 77; Collecting Tithes, No. 13; Ais-áwa, Nos. 8, 191; Army, Nos. 84, 85; Convention of Madrid, and other Treaties, Nos. 63, 165,

82, 84, 85, 86; Moorish Entertainments, No. 64; Commerce, Nos. 26, 29, 80; Three Months in Suz, 20–24.

1596. 1884. **Sabatier, Camille.**—Essai sur l'Ethnologie de l'Afrique du Nord. Revue d'Anthropologie, 15th July.

1597. 1884. **Rohlfs, Gerhard.**—Der heutige Zustand von Marokko. Köln Zeit., No. 13, Sept.

Dr. Rohlfs seems to believe that the Moroccan question is incapable of solution; he describes the Sultan as all-powerful for evil and powerless for good.

1598. 1884. **Hildyard, H., Lt.-Col.**—A Visit to the Capital of Southern Morocco. Army and Navy Magazine, May and June, pp. 1 *et seq.*

1599. ——— **The Armed Forces of Morocco.** Army and Navy Magazine, No. 48, October, pp. 547–553.

1600. 1884. **Pallu de Lessert, Clement.**—Etudes sur le droit public et l'organisation sociale de l'Afrique romaine. Les assemblées provinciales et le culte provincial de l'Afrique romaine. Paris, 8vo, pp. 90. He finds no trace of "concilia provinciæ" or of "sacerdotes provinciæ" in Mauretania Tingitana. But this is due, he thinks, not to the low culture of that province, but to the fact of its Roman ruins not being sufficiently explored.

1601. 1885. **Condition of Morocco.**

This forms the theme of a long letter by Mr. Donald Mackenzie in the 'Times,' Jan 30. It is one of the most concise summaries we have.

1602. 1885. **Ratzel, Fr.**—Kultur- und Staatenkarte von Afrika. Skizze der Staatenbildenden Völker und der Eingebornenen Staaten. Gotha: 4to.

1603. 1885. **Reid, S. G.**—Winter Notes from Morocco. Ibis: 1885, pp. 241.

1604. 1885. **"Sarcelle" (C. A. Payton).**—A Spring Ramble in Morocco. 'Field,' 25th May.

1605. 1885. **Lapeen, Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1883. Cons. Comm. Reports received at F.O. during 1884, Pt. i., p. 933.

1606. 1885. **Redman, Vice-Consul.**—Report on the Trade of Magazan for 1883. l. c., p. 935.

1607. 1885. **Frost, Vice-Consul.**—Report on the Trade of Rabat for 1883. l. c., p. 943.

1608. 1885. **Hunot, Vice-Consul.**—Report on the Trade of Saffee for 1883. l. c., p. 949.

1609. 1885. **White, Consul.**—Report on the Trade of Tangier for 1883. l. c., Pt. ii., p. 1686.

1610. 1885. **Castonnet des Fosses, H.**—Les Intérêts Français au Maroc. Bull. Trim. de Géogr. Oran, t. v., p. 17–40.

The author gives a slight sketch of the various dynasties and governments which have existed in the country, and of the European expeditions to it; of its present condition, physical, political and social; a description of its various ports and inland towns, and observations on the course which he thinks necessary for augmenting French influence in it.

1611. ——— Le Chérif de Ouazzan. l. c., p. 41–47. A biographical sketch of the Grand Sherif Haji Abd-es-Selam, and an account of the confraternity of

Mowlai Taeb, of which he is the head. See also Rev. Franç. de l'Étrang. et des Colonies, t. i., pp. 39–44, with a portrait of the Sherif.

1612. 1885. **Castonnet des Fosses, H.**—Les Portugais au Maroc. Annales de l'extrême Orient, t. viii., pp. 129, 161, 193. Also separately, Paris: 8vo, 1886, pp. 39.

1613. ——— Le Maroc. Conférence faite à Cambrai, 29 Mars. Bull. Union Géogr. du Nord, Douai, Nos. 5 and 6. Also in separate form, Douai: 8vo, pp. 41.

1614. ——— Le Maroc, tel qu'il est. Paris: 8vo.

1615. 1885. **Perry, Harold A.**—The Fate of Morocco. National Review, June, pp. 444–457.

1616. 1885. **Broadley, A. M.**—English Interests in North Africa. Fortnightly Review, April. Chiefly concerns Tunisia.

1617. 1885. **Mission Militaire** envoyée au Maroc en 1882. Bull. Trim. de Géogr. Oran, t. v., pp. 158–177, with a map of the routes from Mazagan to Morocco, and from Morocco to Mogador.

The anonymous author states: "Nous nous bornerons à décrire les deux routes suivies par la Mission, sans prétendre faire une description géographique qui n'aurait aucun caractère de précision."

This is followed by an article entitled 'Situation Militaire du Maroc,' translation of one in the Deutsche Heeres-Zeitung of the 24th Aug.

1618. 1885. **Mercier, E.** — Quelques Notes sur le Tafilalet. Bull. Trim. de Géogr. Oran, t. v., pp. 79–87.

An itinerary followed by caravans from Tlemsen, returning south, and an account of the oasis of Tafilalet, formerly Sijil-Messa. This is followed by a short article on the route thence to Fez and Merakish. M. Mercier is one of the most distinguished of Algerian scholars.

1619. 1885. **Tauxier, Capitaine H.**—Le Mulucha, or Molochath (Oued Makta). Rev. Afr., vol. xxix., p. 41 *et seq.*

The writer seeks to prove that the river in question is the Makta, to the east of Arzew, and not the Muluia on the frontier of Morocco.

A reply to this by M. Ernest Mercier, 'La question du Mulucha,' appeared in the Rev. de l'Afr. Franç., 1886, t. iv., p. 178.

1620. 1885. **Basset, René.**—Notes de Lexicographie Berbère, Part ii. Paris: 8vo, pp. 111. Reprinted from Journ. Asiatique. See also Nos. 1520, 1687, 1849.

This is the dialect of the Beni Menasser, a Berber tribe to the west of Algiers, and only bears indirectly on the general subject of the Berber language in Morocco.

1621. 1885. **[Verschoyle, Rev. John.]** — Among the Arabs of Western Africa: a Ride into the Cities of the Interior in 1884. Literary and Art Supplement to the 'Pictorial World,' February 26th, March 5th, March 12th, March 19th, March 26th, April 2nd.

An account, with numerous illustrations by Thomas Macquoid and others, of a journey from Tangier to Fez.

1622. 1885. **Erckmann, Jules.**—Le Maroc moderne. Paris: 8vo, pp. 304, with a map of Western Morocco from Aglou to Mehedia (old Mamora), plans of Fez, Morocco city (Merakish) Agadir and Tarudant, and six plates of Morocco city and vicinity.

The author was a Captain of Artillery, and chief of the French Military Mission in Morocco from 1877 to 1883. Hence his book, though very

imperfect, and spoilt by prejudice, is one of the few original authorities on the country, especially on the Army and Court régime.

1623. 1885. **Postel, Raoul.**—L'Allemagne et le Maroc. Gazette Géographique.

1624. ——— En Tunisie et en Maroc. Paris: Libr. Gén. de Vulgarisation, 8vo, p. 221. 15 illustrations.

1625. 1885. **Mohammed Abou Ras ben Ahmed ben Abd el-Kader en-Nasri.**—Voyages extraordinaires et Nouvelles agréables, par . . . Récits historiques sur l'Afrique septentrionale, traduit par M. A. Arnaud, Interprète Militaire. Alger: 8vo, p. xiii., 219.

In this mass of notes and comments will be found many curious memoranda about Morocco, *e.g.* pp. 12, 59, 82, 119, 120, 124, 159, 160, etc., and about the history and divisions of the Berbers *passim*.

1626. 1885. **Paléologue, Maurice.**—Le Maroc. Notes et souvenirs. Rev. des Deux Mondes, 15th April, vol. 68, pp. 888–924.

An interesting account of a short residence at Tangier, and a visit to Marekish in company with M. Monfraix, first Secretary of the French Legation.

1627. 1885. **Gimenez, S.**—España en el África septentrional. Madrid: 4to, p. 74.

1628. 1885. **Mer, A., Captaine.** — Mémoire sur le périple d'Hannon. Paris: 8vo.

1629. 1885. **Sorela.**—Les possessions espagñoles en Afrique. Paris: 8vo.

1630. 1885. **Duveyrier, Henri.**—Note au sujet de soulèvements au Maroc. Compte-Rendu des Séances de la Soc. de Géogr. Paris, p. 148. With sketch-map showing the districts affected by the insurrection, and those parts of Morocco which are practically independent.

1631. ——— Note sur l'Occupation de la côte du Sahara par l'Espagne. Bull. Soc. Géogr. Paris, p. 519.

1632. 1885. **Foucauld, Vicomte Ch. de.**—Tableau des Positions determinées dans le Maroc, 1883–84. l. c., p. 296.

1633. ——— Tableaux des Observations astronomiques, observées au Maroc. Bull. Soc. Géogr. Paris, p 297.

1634. ——— Note sur l'Altitude de Fâs. l. c., p. 590.

1635. ——— Foucauld's Journeys in Morocco. Proc. R. G. S., London, pp. 547–548. (From Bull. Soc. Géog. Paris, April 24th.)

1636. ——— Itinerarios en Marruecos. Bol. Soc. Geogr. Madrid, t. xxiii., pp. 110–117.

1637. 1885. **Les Possessions espagñoles** sur la côte du Sahara. Gaz. Géogr. (De la Martinière).

1638. 1885. **Vilain.**—Le Dolmen des Beni Snassen (Maroc). Paris: 8vo, illustrated.

1639. 1885. **Marcet, Dr. A.**—Le Maroc, voyage d'une Mission française à la cour du Sultan. Paris: 18mo, pp. viii. and 218, 2 maps, 1 plan and 8 heliogravures; see also, Rev. Scient. (Rev. Rose), t. 37, p. 566.

Dr. Marcet accompanied the Mission of M. Ordega in 1882, from Mazagan to Marekish and back by way of Mogador and the coast route to Tangier— the *via legationum*. His route-map contains some fresh details. 2nd ed., 1886.

1640. 1885. **Lataste, Fernand,** ancien Président de la Soc. Zool. de France.—Étude de la Faune des Vertébrés de Barbarie (Algérie, Tunisie et Maroc). Catalogue provisoire des Mammifères, Apélagiques sauvages. Actes de la Soc. Linn. de Bordeaux, xxxix' vol., pp. 129–289. Also separately, Bordeaux: 8vo, pp. 177.

So far as Morocco is concerned, the list is not derived from personal knowledge. It is compiled, and not always correct.

1641. 1885. **La Política Hispano-Marroquí** y la opinión pública en España. Peticiones elevadas a las Cortes en el año de 1884–85, por varias sociedas geográficas y científicas; Juntas de Agricultura, Industria y Comercio; Sociedades económicas de Amigos del País; Círculos mercantiles; Ateneos industriales, etc. Sobre la Política de España en Africa. Madrid: 8vo. pp. 92. One of the publications of the Sociedad Española de Africanistas y Colonistas. A reprint with additions of the paper No. 1583.

1642. 1885. **État économique du Maroc.**—Rev. Franç. de l'Étranger et des Colonies, t. i., p. 158. An anonymous letter from Tangier, on the commerce of the country and its future.

1643. 1885. **Bousquet, Du.**—Maroc. l. c., pp. 277, 280.

Written under the supposition that a Mission was to proceed from Morocco to Paris and London, and that M. Feraud was about to go to the Sultan's court.

1644. 1885. **Chavagnac, Le Comte de.**—Maroc. Quinze jours à Wazzan. l. c., pp. 360–376, with 2 illustrations.

The author accompanied the Shereef to Wazzan in the hope of continuing his journey to Oran. He does not state the result in this article.

1645. 1885. **Merle, A.**—L'Angleterre, la France et l'Espagne, à propos de l'île d'Arguin. Rev. de Géogr., Paris, t. xvi., p. 169.

This refers to the various efforts made by European nations to found establishments on the West Coast of Morocco, and especially of Spain to reoccupy its ancient station at Santa Cruz de Mar Pequeña.

1646. 1885. **Martinière Henri, de la.**—Itinéraire d'Alkazar (El-Ksar el Kébir) à Ouezzan, par Tchiavena et Tsériséra. l. c., t. xvii., pp. 413–425, with a map.

1647. ——— Le Sultan du Maroc et son gouvernement. Rev. Franç. de l'Étr. et des Colonies, t. ii., pp. 282–285.

1648. ——— Union latine dans l'Afrique septentrionale. La France et l'Espagne au Maroc. l. c., pp. 369–373.

He states: "À prendre seuls le Maroc, nous nous heurterions à l'Espagne, tandis que l'ayant comme alliée nous pourrions passer outre malgré les protestations de l'Angleterre."

1649. 1885. **Galindo, y de Vera Leon.**—Historia, vicisitudes y politica tradicional de España respecto de sus posesiones en las Costas de Africa. Madrid: 4to, pp. 482.

1650. ——— **Territorios** adquiridos para España por la Sociedad española de Africanistas y Colonistas en la Costa occidental de Africa. Bol. Soc. Geogr. Madrid, xviii., p. 355.

1651. 1885. **Cervera Baviera (Julio).**—Expedicion geográfico-militar al interior y costas de Marruecos, Setiembre, Octubre, Noviembre y Diciembre de 1884. Barcelona: 4to. (Publicaciones de la Revista científico militar.)

1652. 1885–1888. **Burton, Sir Richard F.**—Alf Laylah wa Laylah. A Plain and Literal Translation of the Arabian Nights' Entertainments, now entitled 'The Book of the Thousand Nights and a Night,' with introduction, explanatory notes on the manners and customs of Moslem men, and a terminal essay upon the History of the Nights. "Benares: Printed by the Kamashastra Society" for Private Subscribers only. 10 vols. with 6 volumes of Supplement. Royal 8vo.

These volumes, especially the later ones, printed after the Editor's visit to Tangier, contain many notes and references to Morocco, though unfortunately not always accurate. For example, (vol. viii. p. 272) he credits a writer in the Globe (Feb. 5th, 1884) with identifying the Garden of the Hesperides with the mouth of the Lukkos (El Kus) river. This myth is as old as Pliny, and is repeated by many writers on Morocco since his day, among others by Chenier and Tissot.

1653. 1885. **Crevna, C. F.**—Da Marocco a Mogador. Cora's Cosmos viii., No. 8, p. 225, with map.

1654. 1885. **Von Tanger** nach Fez. Export. (De la Martinière.)

1655. 1885. **Marokko.**—Lage des Zuckermarkts. Deutsches Handelsarchiv, February Heft.

Handel und Schifffahrt der Marokkanischen Hafenplätze i. J. 1884. *Ibid.*, April Heft.

Mazagan: Handel und Schifffahrt, 1884. *Ibid.*, May Heft.

Larache: Handel und Schifffahrt, 1884. *Ibid.*, June Heft.

Mogador: Jahresbericht, 1884. *Ibid.*, August Heft.

Rabat: Handel und Schifffahrt, 1884. *Ibid.*, June Heft.

Saffi: Handel und Schifffahrt, 1884. *Ibid.*, May Heft.

Tangier: Handel und Schifffahrt der marokkanischen Hafenplätze und insbesondere des Hafens v. Tangier im J. 1884. *Ibid.*, October Heft.

1656. 1885. **Piesse, L.**—Itinéraire de l'Algérie et de Tunisie et de Tanger. Nine maps and 10 plates. Paris: 18mo.

1657. 1885. **La Africana,** Spanish Satirical Weekly (Tangier). Eduardo Hanglin, editor. It was issued for fifteen weeks in the autumn of 1885, and for two weeks (with lithographed cartoons) in the spring of 1886, when it became extinct.

1658. 1885. **Blumentritt, F.**—Die Spanischen Presidios an der Nordküste Maroccos. Globus, xlviii. n. 18, 279–282.

1659. ——— Die neuen Erwerbungen Spaniens an der atlantischen Küste Nord-Afrika's. l. c., xlviii., No. 20, p. 311–314.

1660. 1885. **Houdas, O.**—Monographie de Méquenez. Journal Asiatique, 8me. Sér. t. v., pp. 103–148. Also separately, Paris: 1886.

This is mainly a translation of the Arabic MS. of Mohammed ben Ahmed ben Mohammed ben Ghazi Elotsmani Elketami, who again revised and amplified the notes of a Mekenes Kadi (A.H. 640) named Abdul Khettab Sahl ben El Kasem ben Abdullah ben Mohammed ben Hammad ben Mohammed ben Zeghbush.

1661. ——— Morocco (from Le Reveil du Maroc). London Chamber of Commerce Journal, p. 95.

1662. 1886. **Lee, Sir Joseph C.**—The North-West Coast of Africa. Journ. Manchester Geogr. Soc., vol. ii., p. 145, with maps. Reprinted in Times of Morocco, No. 44.

The portion of the coast here described is that immediately outside and south of the empire of Morocco, from Wad Draa in the North to the Bay of Arguin in the South, including Cape Jubi. An account is also given of the North-West African Company's operations at the latter spot.

1663. 1886. **Mackenzie, Donald.**—Report on the Condition of the Empire of Morocco. Addressed to the Right Hon. the Earl of Iddesleigh, G.C.M.G., Her Majesty's Principal Sec. of State for For. Aff. Published under the sanction of the Brit. and For. Anti-Slavery Soc. London: 8vo, pp. 55, with map (French) and Views of Tangier and Mogador.

The author specially visited Morocco for the purpose of making this report; though contrary to what the title might infer, it was not commissioned by Her Majesty's Government.

1664. ——— Abuses in Morocco. These were discussed in the 'Times,' July 28th, 'Globe,' Jan. 25th (Prisons) *et seq.*

1665. 1886. **Stutfeld, Hugh E. M.**—El-Maghreb; 1200 miles' Ride through Morocco. London: 8vo, pp. xi. and 347, with map of 63 m. to an inch.

The author visited Morocco in 1882–1885. His first journey was from Tangier by Alcassar and Wazan to Fez. Thence he travelled to Mekenes and Rabat. He afterwards visited Merakish; on his return he went W. to Mogador and so back to Tangier. Reviewed by Robert Brown in the Academy, vol. 29, pp. 267, 268.

1666. 1886. **Houdas, O.**—Le Maroc de 1631 à 1812. Extrait de l'ouvrage **Ettordjemân el mo'arib 'an douel elmachriq ou'l maghrib** d'Abouqlqâsem ben Ahmed Ezziâni, publié et traduit par.... Paris: 8vo, pp. ix.: 216 of French (including index), and 108 of Arabic text.

The MS. above quoted, which M. Houdas thus translates, "L'interprète qui s'exprime clairement sur les dynasties de l'Orient et de l'Occident," is a résumé of a universal history in which that of the Alide Cherifs is treated in some detail. Only chap. xv. is here given, in Arabic and French. Ezziani held several high positions under the Sultan of Morocco; the last was the government of Oujda. On his army being defeated by the Arab tribes he fled to Tlemçen in 1812, where he wrote the work in question.

Its Arabic title is:—الترجمان المعرب عن دول المشرق و المغرب لابي القاسم احمد الزياني

1667. 1886. [**Garsten, Norman.**]—Shreds of Morocco. Cornhill Magazine, September, pp. 249–270.

An English Artist's picture of Tangier.

1668. 1886. [**Perdicaris, Ion.**]—American Claims and the **Protection** of Native subjects in Morocco, by a Foreign Resident. [Privately printed for Ion Perdicaris by Wm. P. Griffith & Son, Limited, London: no date or printer on title-page.] 4to, pp. 59 and iv.

1669. 1886. **Kobelt, Wilhelm.**—Die Säugethiere Nord-Afrikas. Zoologische Garten, vol. xxvii., Nos. 6–8.

1670. 1886. **"Sarcelle" (C. A. Payton).**—Miscellaneous Sport in Morocco. 'Field,' 31st July.

1671. ——— Recent Sport in Moorish Waters. l. c., 18th Sept.

1672. ——— Pigeon Shooting in Morocco. l. c., 23rd Oct.

1673. 1886. **"Sarcelle" (C. A. Payton).**—Among the Azlimzah again. l. c., 4th Dec.

1674. 1886. **Redman, Vice-Consul.**—Report on the Trade of Mazagan for 1884. Cons. Comm. Rep. received at F. O. during 1885, Pt. i., p. 324.

1675. 1886. **Frost, Vice-Consul.**—Report on the Trade of Rabat for 1884. l. c., p. 329.

1676. 1886. **Hunot, Vice-Consul.**—Report on the Trade of Saffi for 1884. l. c., p. 333.

1677. 1886. **Payton, Consul.**—Report on the Trade of Mogador for 1884. i. c., p. 441.

1678. 1886. **Hunter, Vice-Consul.**—Report on the Trade of Dar-el-Baida for 1884. l. c., Pt. ii. p. 1784.

1679. 1886. **White, Consul.**—Report on the Trade of Tangier for 1884. l. c., p. 1789.

1680. ——— Report on the Trade of the Consular district of Tangier for the year 1885. Dip. and Cons. Rep. on Trade and Finance. For. Office Ser. for 1886, No. 3, 8vo, pp. 12.

1681. 1886. **Constant, P. d'Estournelles de.**—Les Sociétés Secrètes chez les Arabes, et la Conquête de l'Afrique du Nord. Rev. des Deux Mondes, vol. 74, 1st March, p. 100–128.

Based on Commandant Rinn's 'Marabouts et Khouan' (Bib. Alg. No. 4334). Gives an account of the various secret societies in Morocco amongst others.

1682. 1886. **MacCarthy, Oscar.**—Africa Antiqua. Lexique de Géographie Comparée de l'Ancienne Afrique. Rev. Afr., vol. xxx., p. 1 *et seq.*

This promised to be an important work, embracing all the countries of North Africa, but it was discontinued after 1887 owing to the author's state of health. It reached only the letter N, part i.

1683. ——— Sur les Routes qui conduisent du Maroc à Timboktou. Compte-Rendu des Séances de la Soc. Géogr. Paris, p. 507.

1684. 1886. **Le Chatelier, A.** — Les Frontières Méridionales de l'Algérie. Rev. Scient., 3rd ser., t. xi., p 513 *et seq.*

1685. 1886. **Rohlfs, Gerhard.**—Le Nord de l'Afrique. Gaz. Géogr. et l'Explor., Nouv. Sér., t. xxii., p. 261.

The author reviews the political condition of North Africa. The German version appeared in the August number of the *Rev. Colon. Internationale.*

1686. 1886. **Charmes, Gabriel.**—Une Ambassade au Maroc. Revue des Deux Mondes June 15, t. 75, p. 839, *et seq.* See No. 1760.

1687. 1886. **Basset, René.**—Notes de Lexicographie Berbère, Part iii. Paris: 8vo, pp. 88. Reprinted from Journ. Asiatique. See also Nos. 1520, 1620, 1849.

Dialect of the inhabitants of the South of Oran and various Oases of Morocco: Tiut, Ain Sfisfa, Jebel Tselj, Asla, Ich and Figig.

1688. 1886. **El Eco Mauritano.**—Spanish (Tangier) Weekly. Editor, A. J. Lugaro.

This paper has its own press.

1689. 1886. **Le Commerce au Maroc.** — French Fortnightly (Tangier). Editor, H. Olligslaecher.

Issued in the German interest, though printed in French in Oran. It began on the 22nd March 1886, and expired after seven issues.

1690. 1886. **Africa.**—Spanish Weekly (Ceuta). Editor, Garcia y Contillo. This paper has its own press. See El Eco de Ceuta, No. 1498.

1691. 1886. **Fontpertuis, Ad. F. de.**—Le Maroc. Ses Populations et son Organisation intérieur. La Nouvelle Revue. t. 40, p. 162–179.

A review of the work of Jules Erckmann. See No. 1622.

1692. 1886. **Rinn, Commandant Louis,** Conseiller du Gouvernement.—Nos Frontières Sahariennes. Rev. Afr., vol. xxx., p. 161–242, with map. Also published separately at Algiers.

A remarkable study of the frontier question: of course the author argues in favour of its rectification at the expense of Morocco. The map shows the N.W. Corner of Africa, between Tripoli and Morocco, divided off into its various zones, viz.:—1. The Tell, where "intensitive colonisation" is possible. 2. The High Plateaux, or zone of industrial and pastoral colonisation. 3. The Sahara, where artesian cultivation is practicable. 4. The sand dunes. 5. The northern slopes of the Touareg Mountains. The "*incontestible* frontier" is marked by a red line, closely approaching to Igli in the W., and Ghadames on the E. Tafilalet, Figig, Igli, Tuat, &c., are carefully excluded from the Empire of Morocco.

1693. 1886. **Castonnet des Fosses, H.**—Chronique de Maroc. Rev. de [illegible] Franç., t. iv., p. 54, gives a review of all that had occurred in Morocco [illegible] 1885—The change of French Ministers—Insurrection in the interior—[illegible] an embassy to Paris, &c.; p. 131, gives an account of the military resources of Morocco; p. 204, advocates a union between France and Spain regarding Morocco; p. 278, "La situation au Maroc préoccupe tous les Français."

1694. 1886. **Chavagnac, Le Comte de.**—Extrait des notes d'un Voyage de Fez à la frontière Marocaine en 1881. l. c., p. 65.

M. de Chavagnac was the first Frenchman who followed this route.

1695. 1886. **Pouyanne,** Ingénieur en chef des Mines.—Documents relatifs à la Mission dirigée au Sud de l'Algérie. Paris: fol. pp. 228, with five plates of Profiles.

M. Pouyanne was sent by the Minister of Public Works to report on lines of projected railways. 1. From Ras-el-Ma as far as possible in the direction of the Wad Gir. 2. From Tiaret to El-Maia. 3. From Saida to the South of Algeria. This volume gives much information regarding the districts of Morocco bordering on the Algerian frontier, and on the map of the country between Tuat and Timbuktu.

1696. 1886. **Renou, E.**—Deux Notes sur le Maroc; sur quelques altitudes dans l'empire du Maroc; sur les routes qui conduisent du Maroc à Timboktou. C. R. Soc. Géogr. Paris, No. 16, pp. 505, with map. Scottish Geographical Magazine, 1887, p. 47.

1697. 1886. **Hansen-Blangsted, Em.**—Les Iles Zafarines, près de la frontière de l'Algérie et du Maroc. Comptés-Rendus de la Soc. Géogr. Paris, No. 13, p. 375; La Gazette Géographique et l'Exploration, Nouv. Sér., t. xxi., p. 281, No. 25, with map.

1698. 1886. **B., Négociant.**—Lettres du Maroc, L'Affaire d'Agadir. l. c., pp. 341.

1699. 1886. **Un faux Marocain.**—l. c., pp. 387. Namely El-Hadj Abd-el-Kerim bey.

1700. 1886. **Canal, J.**—Monographie de l'Arrondissement de Tlemçen. Bull. Trim. de Géographie et d'Archéolog. de Oran, Neuvième Année, t. vi. Fascicule xxviii., Jan.—Mar., p. 11 *et seq.*, with errata on p. 164; maps and illustrations.

Much in this monograph touches on the geography and history of the neighbouring part of Morocco.

1701. 1886. **Merle, A.**—La question du Cap Blanc. Rev. de Géogr. Paris, March, t. xviii., p. 183.

Referring to his previous article [No. 1645] the author resumes a discussion regarding the attempts of Spain on the West Coast of Africa.

1702. 1886. **Duval, M. V.**—La Rectification de notre Frontière algérienne vers le Maroc, l'Oasis de Figuig. l. c., pp. 361-370.

1703. 1886. **Crawford, J. V.** and **Allen, C. H.**—Morocco. Report to the Committee of the British and Foreign Anti-Slavery Society, with map. London: 8vo, pp. 39.

The narrative of a mission of inquiry to Morocco by the late Acting British Consul in Cuba and the Secretary of the Anti-Slavery Society.

1704. 1886. **Marokko.**—Neue Abgabe für die aus Städten nach dem Innern von Marokko austretenden Waaren in J. 1885. Deutsches Handelsarchiv (Gesetzgebung), May Heft.

Abgaben zum Zweck der Sicherung des Waaren und Geldtransports von den Seehäfen nach dem Innern. *Ibid.*, June Heft.

Casablanca: Handelsbericht im J. 1885. *Ibid.* (Berechte), November Heft, p. 830.

Larache: Handelsbericht im J. 1885. *Ibid.*, November Heft, p. 836.

Mazagan: Handelsbericht im J. 1885. *Ibid.*, November Heft, p. 832.

Mogador: Handelsbericht im J. 1885. *Ibid.*, November Heft, p. 833.

Rabat: Handelsbericht im J. 1885. *Ibid.*, November Heft, p. 836.

Saffi: Handelsbericht im J. 1885. *Ibid.*, November Heft, p. 835.

Tangier: Handel und Schifffahrt der Marokkanischen Hafenplätze und insbesondere des Hafens von Tangier im J. 1885. *Ibid.*, November Heft, p. 825.

1705. 1886. **Martinière, Henri de la.**—Essai de Bibliographie Marocaine, 1844–1886. Rev. de Géogr. (Drapeyron), t. xix., pp. 96–107 and 184–194.

An attempt to complete that published by M. Renou in 1844, in his 'Description Géographique de l'Empire de Maroc.' He gives only 184 of the most important works regarding "un pays que tout Français doit considérer comme le futur complément de notre Algérie," and is not generally very exact. See also No. 1910.

1706. ——— Itinéraire de Ouezzan à Meknès, Juin 1884, suivi par MM. A. M. et H. M. l. c., t. xviii., pp. 137 *et seq.*, with map.

1707. ——— Altitudes hypsométriques déterminées au Maroc. Paris: 8vo, p. 7.

1708. ——— Le Maroc et les puissances Européennes. Rev. Franç. de l'Étrang. et des Colon., t. iii., pp. 311 *et seq.*

The burden of the article is "Puissions-nous donc voir compléter notre œuvre dans l'Afrique du Nord et régler les destinées de ce vieil empire du Maghreb."

1709. ——— La question du Maroc dans l'union Latine. l. c., t. iv., pp. 569–573.

The author proposes rather a Franco-Spanish alliance, in order to "écarter tout nouveau compétiteur du pays."

1710. 1886. **Martinière, Henri de la.**—Principaux Ouvrages relatifs au Maroc. l. c., pp. 188–190.

Short notices of the various works on the subject since 1860.

1711. 1886. **Campou, Ludovic de.**—Le Maroc, hommes et choses correspondant, l.c., pp. 429–457; 627–640.

The author says: "Il faut parler du souverain, de la cour, de son gouvernement, de l'organisation sociale, en résumant les données curieuses qu'un séjour prolongé m'ont permis de recueiller sur place."

1712. ——— Un Empire qui croule. Le Maroc contemporain. Paris: 12mo, pp. 250.

The author, a civil engineer who died very young, states that the commerce of Morocco does not exceed 40 millions of francs, of which two-thirds are in the hands of the English. He has no doubt that, the question of the West being as complicated as that of the East, "l'empire des Chérifs peut continuer de crouler en paix." For a review, see Rev. de Géogr. Paris: t. x., p. 156.

1712a. 1886. **Frost, John.**—Report sur la situation du Commerce et de Navigation à Rabat en 1885. Récueil Consulaire de Belgique, No. 8, t. xlvi., pp. 97–98.

1713. 1886. **Duveyrier, Henri.**—Les "Chemins des Ambassades" de Tanger à Fâs et Meknâs en 1885. Bull. Soc. Géogr. Paris, 7 Sér., t. vii., pp. 344–363.

Account of his journey with M. Charles Féraud, French Minister at Tangier. A synopsis of this journey and M. Duveyrier's latest exploration is given in Cosson's "Compendium Floræ Atlanticæ," vol. ii., pp. lviii–lxii.

1714. 1886. **O'Shea, John.**—Picturesque Spain. 2 vols., London: 8vo.

Contains the usual visit to Tangier.

1715. 1886. **Perez del Toro.**—España en el Norveste de Africa. Madrid: 8vo.

1716. 1886. **Puente y Rubro, Pedro de.**—Pesquerias hespano Africanas Revista de Geografia Comercial, No. 26.

1717. 1886. **Ferreiro, Don Martin.**—Memoria sobre el progreso de la trabajos geográficos leída en la junta general del 15 de Diciembre de 1885. Bol. de la Soc. Geogr. de Madrid, t. xx., pp. 12–41. From p. 19 to 22 refers to Morocco.

1718. ——— The same for 4 May, 1886. l. c., pp. 249–279. The portion regarding Morocco is from p. 257–261.

1719. ——— Exposición al Gobierno de S.M. sobre la conveniencia de Mejorar *el Servicio del Correo* Español en Marruecos. l. c., pp. 318–321.

1720. 1886 **Basset, René.**—Relación de Sidi-Ibrahim de Massat sobre el Sus. l. c., pp. 209–233. An unauthorized Spanish translation of No. 1469, and full of errors.

The work of this Taleb was written in A.H. 1251 = A.D. 1835–6. The translator says of it: "es uno de los pocos monumentos de la lengua berberisca, que no se deben á fuentes árabes ni pertenecen á la literatura religiosa."

1721. 1886. **Benitez, D. Cristôbal.**—Notas tomadas por .... en su viaje por Marruecos, el desierto de Sahara y Sudan, al Senegal. l. c., pp. 337–362 *et seq.* See also 'Revista Contemporánea,' No. 243, Jan. 15 *et seq.*

1722. 1886. **La Cámara de Comercio en Tanger.** Boll. Soc. Geogr. Madrid, t. xxi., p. 317. From the 'Archivo Diplomatico y Consular de España.'

1723. 1886. **Marchessi Vincenzo.**—La relazioni tra la Republica Veneta ed il Marocco dal 1750 al 1797. Torino: 8vo. From the Revista Storica Italiana, vol. ii.

1724. 1886. **Whetnall, Baron.**—Rapport annuel sur la Commerce du port de Tanger et sur la situation industrielle et commerciale du Maroc, avec les tableaux statistiques à l'appui. Recueil Consulaire Belge, t. lvi., pp. 1–53.

An admirable digest of the condition of Morocco by the Belgian Minister Resident at Tangier.

1725. 1886. **Reclus, Élisée.**—Nouvelle Géographie Universelle; La Terre et les Hommes. t. xi. L'Afrique Septentrionale: Tripolitaine, Tunisie, Algérie, Maroc, Sahara. Paris: 8vo, pp. 912, four coloured maps, 160 maps in the text, and eighty-three woodcuts.

A work of the highest value. The portion devoted to Morocco is from p. 653 to p. 783; Charts in text, Nos. 129–145, Plate iii., and Engravings lxii.–lxxvi.

There is an English edition of Reclus, "The Earth and its Inhabitants—The Universal Geography." Edited by E. G. Ravenstein and A. H. Keane. London: 12 vols., no date. Vol. xi., p. 345, Morocco; p. 414, The Sahara; p. 471, The Western Sahara.

1726. 1886. **Hind Smith, W. Wilson.**—A Boy's Scrambles, Falls and Mishaps. [No date or Publisher, but, "Printed by J. Bissley at the Gunnersbury Press, High Road, Chiswick, 1886."] pp. 86, with ten illustrations, several of which do not concern Morocco but Algeria.

This book is the narrative of a colporteur's trip to Laraiche and afterwards to Fez, &c.

1727. 1886. **Payton, Chas. A.**—Rapport général du Vice-consul de Belgique à Mogador pour l'année 1885.

1728. ——— Ditto. pp. 53–60.

1729. 1886. **Jannasch, R.**—Von Schwika über Wad-Draa bis Mogador. 'Export,' No. 24, viii., p. 367.

1730. ——— Handelspolitisches über Marokko. l. c., No. 27, p. 413.

1731. 1886. **Quedenfeldt, M.**—Reise und Reiseverhältnisse im Sultanat Marokko. Verhandl. der Berl. Gesellsch. für Erdkunde, vol. viii., p. 440.

1732. 1886. **Rohlfs, Gerhard.**—Quid Novi ex Africa. Cassel: 8vo.

A collection of scattered magazine and newspaper articles, of which three—"Der heutige Zustand von Marokko" (pp. 157–185), "Die Marokkanische Armee" (pp. 185–194), and "Beitrag zur Geschichte der Medicin und Medicinischen Geographie Marokkos" (pp. 194–212)—are specially on Morocco, while several others are more or less concerned with it.

1733. 1886. **Romanelli, Samuel Aaron.**—Massa Ba'arab sive Samuelis Aaronis Romanelli Mantuaris itineris sub finem sæculi decimi octavi per Mauritaniam facti Descriptio. Editio quinta, Hebraica emendatiora editet versionem Anglicanam, annotationes criticus, scriptoris vitam adjecit Salomi Marcus Schiller Szineosy .... Pars Prima, textum Hebraicum continens. Cantabrigiæ: 8vo.

1734. 1886. **Mas Latrie, Le Comte de.**—Relations et Commerce de l'Afrique Septentrionale, ou Magreb avec les Nations Chrétiennes au moyen age. Paris: 8vo, pp. v. 531.

This is virtually a corrected reprint of the introduction to No. 973. The portions which most directly concern Morocco are pp. 67, 117, 130, 145, 225, 227, 229, 255, 256, 299, 320, 390, 453, 454, 455, 501.

1735. 1886. **Mas Latrie, Le Comte de.**—Morocco: Negotiations for commercial Treaty. London Chamber of Commerce Journal, p. 138.

1736. 1887. **Boletino** de la Camera de Comercio de Tanger (Spanish Monthly). Tangier.

1737. 1887. **The Illness of the Sultan of Morocco** and the Complications expected to follow were fully discussed in the St. James' Gazette, Oct. 5th, Pall Mall Gazette, Oct. 10th and 18th, Times, Oct. 12th, 13th, 25th, and 28th.

1738. 1887. **Erckmann, Jules.**—Maladie de l'Empereur du Maroc. Nouv. Rev., t. xlix., pp. 179–186.

Speculations as to the result of Moulai Hasan's death, should it occur.

1739. 1887. **Protection in Morocco, &c.**

This forms the theme of many articles in the English press. Among these may be mentioned the Pall Mall Gazette, Oct. 17th, 25th, and 27th, and Nov. 9th; St. James' Gazette, May 14th; Times, May 7th; Graphic, Oct. 29th (Portrait (?) of Sultan Moulai el Hasan), Nov. 12th (Views of Tangier). An article on the Troglodytic (?) Caves in Morocco appeared in the 'Times,' Sept. 15th (W. B. Harris).

1740. 1887. **Davis, Lt.-Col. John.**—The History of the Second Queen's Royal Regiment, now the Queen's (Royal West Surrey) Regiment, with maps and illustrations. Vol. i., The English occupation of Tangier from 1662 to 1684. London: 8vo, pp. 322.

The book is to be completed in four vols. The first is, however, the one of interest as regards Morocco. It contains a digest of many of the State Papers regarding the English occupation, the building of the Mole, &c., and contains reproductions of some of Hollar's engravings.

There are seven appendices:—A. Mauretania. B. History of Old Tangier, and a brief account of the Moorish princes who are referred to in this volume. C. Laws and Ordinances of War. See No. 217. D. Articles of Peace, &c. See No. 236. E. Lord Dartmouth's Letter and list of papers, &c.; sent home by Dr. Trumball, 19th October, 1683. F. A survey of the present state of the Fortifications at Tangier, with an estimate of the charge of fortifying the same, &c.; taken by direction and commission of His Excellency George, Lord Baron of Dartmouth, &c., 2nd October, 1683. G. His Majesty's Message to the Commons in Parliament, relating to Tangier, and the Humble Address of the Commons to His Majesty in answer to that Message.

1741. 1887. **Russell, Frank S.**—The Earl of Peterborough and Monmouth (Charles Mordaunt). London: 2 vols. 8vo.

Contains some account of Tangier transactions during the English occupation.

1742. 1887. **Göbel, E.**—Die Wesküste Afrikas in Altertum und Die Geschichte Mauretaniens bis zum Tode seines letzten Königs. Inaugural Dissertation zur Erlangung der philosophischen Doktorwürde bei der Universität Leipzig. Leipzig: 8vo., pp. 109.

A laborious analysis of all the writers of antiquity who make any mention of the West Coast of Africa, that of Morocco included. Hecatæus, Herodotus, Hanno, Scylax, Ephoros, Eratosthenes, Pobybius, Poseidonios, Artemidoros, Nepos, Statius, Sebosus, Vipsanius Agrippa, Juba, Strabo, Pomponius Mela, Pliny, Dionysius Periegetes, and Ptolemy are among the authors whose slightest allusions to West Africa are criticised. The third part of the Essay is upon the

old trade of the country, while it concludes with an account of the Mauretanian Kings. The writer does not, however, add much to our knowledge.

1743. 1887. **Westerlund, C. A.**—Fauna der in der Paläarctischen Region (Europa, Kaukasien, Siberien, Turan, Persien, Kurdistan, Armenien, Mesopotamien, Kleinasien, Syrien, Arabien, Egypten, Tripolis, Tunesien, Algerien und Morocco) lebenden Binnenconchylien. 4 vols. Berlin: 8vo.

1744. 1887. **Harris, Walter B.** A series of interesting articles, with admirable illustrations by Mr. R. Caton Woodville, on the British Mission to Morocco under Sir W. Kirby Green in April, appeared in the Illustrated London News of the 27th August; 3rd, 10th, 24th September; 1st October.

1745. 1887. **Hay, Right Hon. Sir John Drummond.**—How Piracy was stopped in Morocco. Murray's Magazine, November, vol. ii., pp. 583–595.

1746. 1887. **Morocco.** Supremacy of British Trade; European Competition; Hints to Traders by the Belgian Consul-General at Tunis. Morgan's British Trade Journal, Feb.

1747. 1887. **Mackenzie, Donald.**—Anti-Slavery Memorial to the Sultan of Morocco. (The Anti-Slavery Reporter, London, 1887). Broch. in-8.

1748. 1887. **Warren, Sir Charles, Col. R.E.**—[Some Remarks on the Jews of Morocco]. Scottish Geographical Magazine, January, pp. 12, 13.

1749. 1887. **"Sarcelle" (C. A. Payton).**—Boar Shooting in Morocco. Field, 15th Jan.

1750. ——— Mullet and Mussels. l. c., 5th Feb.

1751. ——— A splendid day's Sea Angling. l. c., 25th June,

1752. ——— Sport in Moorish Waters. l. c., 8th Oct.

1753. ——— The Return of the Tasergelt. l. c., 31st Dec.

1754. 1887. **Payton, C. A.**—Report for the year 1886 on the Trade of the Consular District of Mogador. For. Off. Ann. Ser. of Cons. Reports, No. 181.

1755. 1887. **White, Herbert E.**—Report for 1886 on the Trade of Tangier. l. c., No. 209.

1756. ——— Report on the Textile Fabrics of the Consular District of Tangier. Foreign Office Misc. Series, No. 30, pp. 5.

1757. 1887. **Mhammed ben Rahal.**—Le Soudan au xvie siècle. Traduit de l'original Arabe. Bull. Trim. de Géogr. Oran, t. vii. p. 320.

Translation of a work (*Divertissement du Chamelier par l'exposé de l'histoire des Souverains du siècle onzième*) by **Mohammed es-Sghir Ben el-Hadj Mohammed bin Abdallah,** who lived in the 12th or 13th century of the Hegira. This is the narrative of the expedition led by Abou l'Abbas Ahmed el Mansur, which left Morocco in A.H. 989. See No. 1921.

1758. 1887. **Les Anglais sur la côte nord-ouest de l'Afrique.**—Rev. de l'Afr. Franç., t. v., p. 13.

An account of the N.W. African Company's operations at Cape Juby.

1759. 1887. **Castonnet des Fosses, H.**—Chronique de Maroc. l. c., p. 139.

This advocates a rectification of the French frontier.

1760. 1887. **Charmes, Gabriel.**—Une Ambassade au Maroc. Paris: 8vo, pp. 343.

The author accompanied the mission of M. Féraud, French Ambassador to the Sultan at Fez, of which he has written a brilliant description. This appeared originally in the Rev. des Deux Mondes, 15th June, 1886, p. 839 *et seq.*, No. 1686. Part of it was translated in Times of Morocco, Nos. 116, 117.

1761. 1887. **Morocco.** Westminster Review, vol. cxxviii., No. 9, December, pp. 1111–1125.

1762. 1887. **Cosson, E.**—Compendium floræ Atlanticæ, &c. See No. 1419. Vol. ii., pp. cviii.+367, separately indexed.

1763. ——— Conspectus Floræ Atlanticæ, ou Énumération méthodique des Plantes connues en Algérie, en Tunisie et au Maroc. 8vo (in serial form).

This is an abridgment and prodromus of the preceding.

1764. 1887. **Bonnet, Edmond.**—Florule de El-Araïch [Laraiche]. Le Naturaliste, pp. 403–404.

The collection upon which the Florule is based was made in the winter and spring of 1886 by M. Alphonse Mellerio, who had been compelled to pass the cold season on the coast of Morocco. It consists of 155 species. It supplements the collections of the late Mr. J. Grant (Abd el Kerim Grant) at Rabat, etc., which have been incorporated into M. Cosson's great work. M. Mellerio also collected at Casablanca (Dar-el-Beida) in 1886–7.

1765. 1887. **Rousset, Camille.**—La Conquête de l'Algérie. Rev. des Deux Mondes, 15th December *et seq.*

The 5th chapter, contained in the Revue for 15th April, 1888, gives an account of the French war with Morocco—Tangier—Isly—Mogador.

1766. 1887. **Chavagnac, Le Comte de.**—De Fez à Oudjda. Bull. Soc. Géogr. Paris, 7 Sér., t. viii., pp. 269–351, with route-map and numerous sketches in the text.

A narrative of the journey made by him in Feb. 1881. See also Extraits des notes d'un Voyage de Fez à la frontière Marocaine en 1881 (same journey). Revue de l'Afrique, 1886, pp. 65–67.

1767. 1887. **Canal, J.**—Les Troubles de la Frontière Marocaine (Mars-Avril 1886). Bull. Trim. Géogr. et Archéol. d'Oran, t. vi., p. 112 *et seq.* Also separately, Oran: 8vo, p. 45, 1886.

This is an eye-witness's narrative of the petty war which broke out between the Mehaia and the Angad near Ujda. Rev. de l'Afr. Franç., July. (Also separately, "Oujda, 1885" Oran: 8vo, 1886, p. 53, with map and views).

1768. ——— La Frontière marocaine. Oudjda. l. c., p. 237.

1769. 1887. **Basset, René.**—Recueil de textes et documents relatifs à la Philologie Berbère. Alger, 8vo, pp. 75. See also Bull. de Corres. Africaine.

Chap. i. Dialectes des Beni Menasser. Chap. ii. Dialectes du Sud Oranais et de Figuig. Chap. iii. Dialecte Chel'ha du Sous et de l'Oued Draa.

1770. ——— Manuel de la Langue Kabyle (Dialect Zouaoua). Grammaire Bibliographie, Chrestomathie et Lexique. Paris: 16mo, pp. 88 and 70*.

The bibliographical part of this work pp. 1*–9* contains a list of works relative to the Berber dialects of Morocco.

1771. 1887. **Martinière, Henri de la.**—Cartographie Générale du Maroc. Rev. de Géogr., t. xx., pp. 20–27 and 108–114. Contains about 117 articles, compiled from the British Museum Catalogue of Maps. No 882.

1772. 1887. **Tessier, Jibrail.**—Voyage de deux Bourgeois au Maroc. De Fez à Mekinez. l. c., t. xxi., pp. 410–424.

1773. 1887. **Duveyrier, Henri.**—La dernière partie inconnue du littoral de la Méditerranée: le Rif. Bull. de Géogr. Hist. et Desc., Ministère de l'Instr. Pub. et des Beaux-Arts. Paris: t. ii., pp. 127–191.

The author gives merely a résumé of what is known of this country, and an idea of the difficulties which an explorer would encounter in it. See also No. 1851.

1774. 1887. **Larmandie, Comte de.**—Trois Semaines au Maroc, Conférence faite au Hâvre, 3 Janvier, 1887. Hâvre: 8vo, p. 20.

1775. 1887. **[Perdicaris, Ion.]**—Mohammed Benani. A story of to-day. London: 8vo, pp. 324.

It is an open secret that the story, published anonymously and intended to expose the abuses of the Protection system, more especially by one particular power (the representatives of which, with other well-known Tangier people, are described under thin disguises), is by Mr. Ion Perdicaris, an American citizen—of Greek origin—long resident in Tangier. The real names of the characters which figure in it may be found in the 'Times of Morocco' (No. 109, Oct. 8th, 1887).

1776. ——— Voyage dans l'intérieur du Maroc. C. R. Soc. Géogr., Paris, No. 13, pp. 445, with map.

1777. 1887. **Ferreiro, D. Martin.**—Memoria acerca de los Progresos geográficos, leída en Junta General de 16 de Noviembre 1887. Bol. de la Soc. Geogr. de Madrid, t. xxii., pp. 182–207.

The part concerning Morocco is at p. 190.

1778. 1887. **Cuevas, D. Teodoro de.**—Larache. Memoria Comercial remitida al Excmo. Señor Ministro de Estado. l. c., p. 71.

1779. 1887. **Foucauld, El Visconde Carlos de.**—Itinerarios en Marruecos. l. c., p. 111–116.

1780. 1887. **El Sáhara Occidental.**—l. c., pp. 145–157.

Narrative of a journey made by M. Douls, a French traveller, from Garnet Bay, near Cape Bojador, to the city of Morocco.

1781. 1887. **Meakin, Budgett.**—Journalism in Morocco. 'The Journalist' (London), January 21st, p. 224.

1782. 1887. **La Duda del Progreso Maroquí.** — Spanish Monthly (Tangier). Editors, Señores Reuben and Shriqui.

Only two numbers appeared. It was printed at Linea de la Concepcion, near Gibraltar.

1783. 1887. **Brown, Robert.**—Muley el Hassan. Cassell's Celebrities of the Century. Edited by Lloyd C. Sanders. pp. 764–765.

1784. 1887. **Imperio Marroquí.**—Organización Militar. Memorial de Artillería. Madrid: 8vo, pp. 43.

"De un libro inédito sobre el Imperio de Marruecos, escrito por un oficial del Cuerpo que ha residido en aquel país, tomamos con la debida licencia, este capítulo."

1785. 1887. **Campos, J.**—Reconocimiento practicado en la costa de Africa desde la Uina ó Méano hasta Cabeza del Moro. Rev. Geogr. Com. Madrid, No. 33.

1786. 1887. **Bonelli, D. Emilio.**—El-Sahara. Descripción geográfico, commercial y agricola desde Cabo Bojador á Cabo Blanco, viajes al interior, habitantes del desierto y consideraciones generales. Madrid: 8vo, pp. xvi., 230, with 4 maps. See also Bol. Soc. Geogr. Madrid, t. xxii., p. 366. Peterm. Mittheil., vol. xxxv., 1889, p. 63.

1787. 1887. **Rein, J.**—Ueber Marokko. Verhandlungen des 7ten deutschen Geographentags zu Karlsruhe, 1887, pp. 74–90.

Most of the results of Rein and Fritsch's journey are still unpublished. Prof. Rein is announced to be writing the Morocco portion of Kirchoff's 'Unser Wissen von der Erde.'

1788. 1887. **Jannasch, R.**—Die Deutsche Handelsexpedition, 1886. Berlin: 8vo, p. 292, 18 views and 3 maps of a high class.

The book is valuable for the information about the Wad Draa and Wad Nun, which the members visited by the expedient of getting wrecked on the coast.

1789. 1887. **Wetzstein.**—Bedeutung der Völkernamen in Marokko und Nord-Afrika. Zeitschrift für Ethnologie, xix., pl. 2, p. 34.

1790. 1887. **Paulitschke, Dr.**—Aus dem Mághreb el-Aqsa. Monatschrift für den Orient, No. 7.

1791. 1887. **Hay, Right Hon. Sir J. Drummond.**—Benaboo. Murray's Magazine, vol. i., May, pp. 609–620.

1792. 1887. **A Visit to Tangier.**—Sunday at Home, Nov. 1887.

1793. 1887. **Horowitz, Victor J.** — Marokko. Das Wesentlichste und Unteressanteste über Land und Leute. Leipzig: 8vo, p. 215.

The author was German "Consulatssekretär" in Tangier.

1794. 1887. **Quedenfeldt, M.**—Nahrungs-Reiz und Kosmetische Mittel bei den Marokkanern. Zeitschrift f. Ethnologie, Berlin, 1887, part iv., p. 241.

1795. 1887. ——— Bemerkungen zu der von mir zusammengestellten Karte des Westlichen Sus-, Nun-, und Tekenagebietes. Zeitsch. d. Berl. Ges. d. Erdkunde, B. 22, Heft v.

1796. 1887. **Folin, Marquis de.**—Sous les Mers. Paris: 8vo.

An account of the Dredging cruise of the *Talisman* along, among other places, the Atlantic Coast of Morocco. Most of the scientific results are still unpublished; indeed, the detailed reports on the various groups seem likely to be much longer delayed than were those of the *Challenger*, for the work is entirely in the hands of a small number of French Naturalists, who have no special knowledge of many of the groups on which they are reporting (Herbert Carpenter, Journ. Linn. Soc. Zoology, vol. xxiv., Oct. 24th, p. 65).

1797. 1887. **Kayser, Gabriel.** — Bibliographie d'ouvrages ayant trait à l'Afrique en général, dans ses rapports avec l'exploration et la civilization de ces contrées depuis le commencement de l'imprimerie jusqu'à nos jours, précédé d'un indicateur. Bruxelles: 8vo, pp. 174.

The compiler enumerates 2,276 books and papers, of which less than a dozen are on Morocco specially—or less than half of what have been published on Barbary alone.

1798. 1887. **Bargès l'Abbé J. J. L.**—Complément de l'histoire des Beni-Zeiyan, Rois de Tlemçen. Ouvrage de Cheik Mohammed Abd'al-Djalil al-Tenessy. Paris: 8vo, pp. xix.+612.

A continuation and expansion of No. 739.

1799. 1887. **Cheekh Mohammed Abd' al-Djalil al-Tenessy** (another form of Ibn Abd' el-Djelyl et-Tenessy), *q. v.*

1800. 1887. **Costa, Joaquin.**—Informe à la Real Academia de la Historia, El Ksar el Acabar, Tangier: 8vo.

1801. 1887. **Marokko.**—Aufhebung des Tabakmonopolis und Verbot der Einfuhr von Tabak, Opium, und sonstigen narkotischen Stoffe. Deutsches Handelsarchiv (Gesetzgebung), May Heft.

1801a. 1887. Handel und Schifffahrt der marokkanischen Hafenplätze i. J. 1886. *Ibid.* (Berichte), November Heft.

1802. 1888. **Affairs of Morocco.**

These formed during this year the theme of many articles of more than ephemeral interest in the Times, Sept. 11th, 29th, Oct. 17th, 18th, 23rd, 30th, and Nov. 6th, 17th; St. James' Gazette, July 24th, Aug. 30th; Morning Post, Oct. 16th, 18th, 21st; East Anglian Times, May 12th (E. Herbert Fison).

1803. 1888 [1581]. **Venegas Pedro de Cordoba.**—Embajada à Marruecos. Bol. de la Soc. de Geog. Madrid, pp. 198–265.

From a MS. in the Library of the Real Academia de la Historia, entitled: 'Relaçion de todo al embaxador Pedro Venegas de Cordova en el viaje que haze à la ciudad de maruecos con çierta embaxada que su mayestad le embia al rrei mulez hamete rrei de marruecos y fez. See also Nos. 83, 101.

1804. 1888. **Dyce, Rev. Alexander A. B.**—The works of **George Peel**, now first collected; with some account of his writings and notes by . . . London: 8vo, 2 vol., pp. xxxvi. and 394, 227; vol. ii., pp. 1–68 contains "The Tragical Battle of Alcazar in Barbary, with the death of three Kings and Captain Stukeley, an Englishman."

1805. 1888. **An Address** to the Marquis of Salisbury by London and Morocco merchants on desirable reforms in the Government of Morocco [dated London: February 1888, fol., pp. 10].

1806. 1888. **Warren, Capt. F. P., R.N.**—Our Corn-Supply to-day. In case of a great Naval War would the result be starvation? [A paper read before the London Chamber of Commerce.] London: 8vo, pp. 16.

The author (who died in 1891) was familiar with Morocco, which he traversed in various directions, residing for considerable periods in Fez, Merakish, Rabat, and other towns. He advocates national granaries, and Morocco as a wheat-producing country.

1807. 1888. **Rolleston, Charles.**—The Protégé system in Morocco. Diplomatic Fly-Sheet, November 1888.

1808. 1888. **Harris, Walter B.**—My Ride to Sheshouan. Blackwood's Magazine, Dec., pp. 786–792.

The author describes his adventurous journey from Tangier to Sheshuan, a city which it was the boast of the neighbouring tribes that no Christian had ever entered. De Foucauld, and it is believed others, had, however, been there before him, and several have been there since that date.

1809. 1888–91. **Mercier, Ernest.**—Histoire de l'Afrique septentrionale (Berberie) depuis les temps les plus reculés jusqu'à a la Conquête française (1830). 3 vols. Paris: 8vo, pp. xxv+444, with 2 maps; p. 477, with 1 map.

This is the most exhaustive work we possess on the general history of the Barbary States, the second volume reaching only to 1515. Each is very fully indexed.

1810. 1888. **Ball, E. A. Reynolds.**—Mediterranean Winter Resorts. A practical handbook to the principal health and pleasure resorts on the shores of the Mediterranean. London: 18mo, p. 237, with illustrations.

Pp. 97–109 are devoted to Tangier—superficial and inaccurate.

1811. 1888. The City of the Shereefs [Wazzan]. Cassell's Family Magazine, Feb., pp. 146–149, with illustrations.

1812. 1888. **Mackintosh, William.** — Translation of the Gospel of St. Matthew into the Riffian dialect of the Morocco Berbers. London: 8vo.

Mr. Mackintosh has since then translated the Gospel of St. John into the same language.

1813. 1888. **Hein, H.** — Un faux diplomate au xviie. siècle. Rev. d'Hist. Diplomatique, Paris: 8vo. Vol. for 1888 contains pp. 656, of which this article occupies from pp. 27–40.

It refers to an ambassador sent from the Sultan to France. The article itself is only from pp. 27–29; the rest is made up of appendices—letters of the Sultan to Louis XIII., &c.

1814. 1888. **La Linterna,** Spanish Satirical Weekly (Tangier). Editor, A. M. Franceri. It lasted to 1891.

Like all of its kindred which sprang into existence during the fever of journalism which seized Tangier between 1880–90, it was more ribald than witty. As there were only a few Europeans to ridicule, its "satire" was grossly personal.

1815. 1888. **Floriant, V. de.**—Le Maroc. Bibliothèque Universelle, Paris: pp. 277–301.

1816. 1888. **Perdicaris, Ion.**—The Protection System. Fortnightly Review, May. A short letter to the Editor.

1817. 1888. **Dalgleish, W. S.**—The Western Sahara, between the Tropic of Cancer and the Wadi Draa. Scott. Geogr. Mag., pp. 479–484.

A summary of M. Douls' wanderings, No. 1870.

1818. 1888. **"Sarcelle" (C. A. Payton).**—Some African Trout. Field, 3rd March.

1819. ——— A Wonderful Year. l. c., 14th April.

1820. ——— Azlimzah and Bass. l. c., 9th June.

1821. ——— Trials with the Tasergelt. l. c., 21st and 28th July.

1822. ——— Good Sport among Sea-fish. l. c., 6th Oct.

1823. ——— Azlimzah at last. l. c., 13th Oct.

1824. ——— Desperate Ill-luck. l. c., 1st Dec.

1825. **Payton, C. A.**—Report for 1887 on the Trade of Mogador. For. Off. Ann. Ser. of Cons. Reports, No. 326, pp. 24.

1826. ——— Report for the year 1887 on the Agriculture of Mogador. l. c., Fo. 339, pp. 14.

1827. 1888. **White, H. E.**—Report for 1887 on the Trade of Tangier. l. c., No. 360, pp. 14.

1828. 1888. **White, H. E.**—Report on the Agriculture of Tangier. l. c., No. 384, pp. 6.

1829. 1888. **Maroc.**—Navigation française à Tanger. Bull. Cons. Fr., iv., p. 88.

1830. ——— Commerce et Navigations de Rabat. Bull. min. off. extér., 88, 743.

1831. ——— Navigazione de Casabianca. *Id.* 695.

1832. ——— Transactions commerciales à Rabat. *Id.* 693.

1833. ——— Commercio de Tangeri. *Id.* 689.

1834. ——— Notize commerciali. Mazagan. *Id.* 691.

1835. 1888. **Marokko.** — Gestattung der Getreideverschiffung zwischen den marokkanischen Häfen. Deutsches Handelsarchiv (Gesetzgebung), April Heft.

Zeitweilige Gestattung der Ausfuhr von Knochen. *Ibid.*, July Heft.

Getreideverschiffung zwischen den marokkanischen Häfen. *Ibid.*, November Heft.

——— Larache: Handel und Schifffahrt in J., 1887. *Ibid.* (Berichte), April Heft.

Mazagan: Handel und Schifffahrt in J. 1887. *Ibid.* (Berichte), April Heft.

Casablanca: Handel und Schifffahrt in J. 1887. *Ibid.* (Berichte), April und September Heft.

Verkehr deutscher Schiffe in den marokkanischen Häfen, 1886–87. *Ibid.*, July Heft.

Mogador: Handel und Schifffahrt, 1887. *Ibid.*, September Heft.

Rabat: Handel und Schifffahrt, 1887. *Ibid.*, September Heft.

Saffi: Handel und Schifffahrt, 1887. *Ibid.*, September Heft.

Handel und Schifffahrt des Sultanats Marokko, 1887. *Ibid.*, December Heft.

Tangier: Handel und Schifffahrt, 1887. *Ibid.*, December Heft.

1836. 1888. **Martinière, Henri de la.**—Aperçu de la Question Marocaine à propos de la prochaine conférence internationale. Rev. de Géogr., t. xxii., pp. 436–446.

The author says: "Les intérêts de la civilisation demanderaient une entente intelligement définie qui mît les deux grandes puissances industrielles occidentales, la France et l'Angleterre à l'abri de toute surprise et ouvrît à leur activité commerciale le Moghrib."

1837. 1888. **Campou, L. de.** — Le Sultan Mouley-Haçon et le Makhzen Marocain. l. c., t. xxiii., pp. 54–58.

Written by the well-known author of "Un Empire qui croule" at the suggestion of a former French Minister in Morocco, who said to him, "Si vous voulez faire œuvre utile, tâchez de bien voir le Makhzen (Moroccan Government) et de le faire connaître."

1838. 1888. **Historical Manuscripts Commission.**

The report on Lord Dartmouth's papers revealed a good deal about Tangier, in the affairs of which one of his ancestors played a prominent part during the English occupation.

1839. 1888. **Valbert, G.** — Un Voyageur français au Maroc. Rev. des Deux Mondes, vol. 86, 1st April, p. 670–681.

The voyageur in question is the Vicomte Ch. de Foucauld. See No. 1842.

1840. 1888. **Soller, Ch.**—Les Caravanes du Soudan occidental et les Pêcheries d'Arguin. Bull. de la Soc. Géogr. Comm. de Paris, t. x. pp. 280–287, with map.

Account given by the author of a mission confided to him to visit Morocco, the Canary Islands, and the Coast of the Sahara between Cape Jubi and Cape Mirik.

1841. 1888. **Say, Louis.**—La Frontière du Maroc. Oujda, Les Beni Snassen, L'Oued Kiss et la Moulouya. l. c., t. x., pp. 528–536, with map and illustrations.

1842. 1888. **Foucauld, Vicomte Ch. de.**—Reconnaissance au Maroc, 1883–84. Paris: 4to, pp. xvi. and 195. Atlas, 21 sheets.

It is impossible to overestimate the value of this work, which, though the most important and accurate which has hitherto been written on Morocco, has received scarcely any recognition from English geographers. The author travelled disguised as a Jew, and visited Sus, the Riff, and many parts of the country previously unknown.

Mr. Joseph Thomson, unquestionably one of the best judges of the subject, remarks: "After passing through hitherto unexplored districts between Mequinez and Demnat, he crossed the Atlas by a new pass, mapped out much of the Anti-Atlas for the first time, recrossed into the valley of the Muluya, and regained Algeria safely, rendering it impossible for any future traveller to make such another brilliant contribution to our geographical knowledge of the N.-Western Corner of Africa."

Shortly after his return to France he became a Trappist monk.

1843. 1888. **Maalem.** — La Question Marocaine. Nouv. Revue, t. l., pp. 791–826.

Written to give a general view of Morocco, in anticipation of the expected Conference of Madrid regarding protection. He recommends the transfer of the legations to the actual seat of government.

1844. 1888. **Seguin, A.**, and **B. Peigneaux.**—En Zigzag du Maroc à Malte, à travers l'Algérie, la Tunisie et les États Barbaresques. Lyon: 18mo, pp. 530.

1845. 1888. **Hay, Right Hon. Sir J. Drummond.**—Reminiscences of Boar-Hunting in Morocco. Murray's Magazine, vol. iii., March (pp. 330–42) and April (pp. 531–540).

1846. 1888. **Delphin, G.**—Fas, son Université et l'Enseignement supérieur Musulman. Bull. Trim. de Géogr. et d'Arch. Oran, t. viii., p. 93–205.

The author was led to make his enquiries in consequence of the superior attainments in Arab literature shown at the Algerian examinations, of Arabs educated at Fez; he obtained his information especially from Si Edris ben Thabet, professor at the Medrasa of Tlemsen and Si Mohammed El-Harchaui, a former teacher of law and grammar at the great Mosque of the same town, who had lived and studied many years at Fez. The author gives a list of the works studied at the Colleges of Fez, and a plan of the city and its neighbourhood.

1847. 1888. **Le Frotter de la Garonne,** Lieut. de Vaissaux.—Nemours, son extension commerciale, son avenir. l. c., p. 219.

This contains a chapter on the commerce of Nemours with the interior of Morocco.

1848. 1888. **Castonnet des Fosses, H.**—La dynastie des Cherifs Fileli. Rev. de l'Afr. Fr., septième ann., p. 386 *et seq.*

This dynasty was founded in the 17th cent., when both Spain, Portugal, and England possessed establisuments in Morocco. Mowlai Sherif, the first Sultan, died in 1652.

1849. 1888. **Basset, René.** — Notes de Lexicographie Berbère, Part iv. Paris: 8vo, pp. 100. Reprinted from Journ. Asiatique. See also Nos. 1520, 1620, 1687.

Vocabulary of the dialects of Tuat, Gurara, Argot, Mzab and the Auel-immiden Tuaregs, therefore bearing only indirectly on the language of Morocco.

1850. 1888. **Darmon, Isaac,** Interprète judiciaire de 1re Classe, à Oran.—Étude sur la secte religieuse de la confrérie Musulmane dite "les Derkaoua." Compte-Rend. Ass. Franç. pour l'Avance. des Sc., Congrès d'Oran, 1888, Part ii., pp. 399–404.

Sidi Moulai-El Arbi, founder of this sect, was born at Fez in 1737 and died in 1815. He advised his followers to respect Christians and Jews, and not to ill-treat animals.

1851. 1888. **Duveyrier, Henri.**—La dernière partie inconnue du Littoral de la Méditerranée. Le Rif. Paris: 8vo, pp. 30. See also No. 1773.

1852. 1888. **Les Protégés au Maroc.** — Rev. Franç. de l'Étrang. et des Colon., v. viii.

1853. 1888. **Conférence de Madrid** pour la Protection des Indigènes au Maroc. l. c., t. vii., pp. 198–201.

The announcement of a conference of Plenipotentiaries of the Great Powers on the subject of protection to be accorded by foreign Consuls to natives of Morocco.

1854. 1888. **Malavialle, L.** — La Question du Maroc. Montpellier: 8vo, pp. 72. Reprinted from the Bull. de la Soc. Languedocienne de Géographie.

1855. 1888. **Haliburton, R. G.**—Letter addressed to the Secretary of the Royal Society, regarding the supposed discovery of a Dwarf Race in Morocco. Nature, May 31st.

1856. ——— Akkas and Dwarfs in Southern Morocco. Paper read at British Association, Bath, Sec. E, 10th Sept.

1857. 1888. **Thomson, Joseph.**—Notes from the Atlas Mountains. Extracts of a letter from . . . . . to Sir Joseph Hooker. l. c.

The Council of the British Association made a grant of £100 towards the expenses of Mr. Thomson's expedition.

1858. 1888. **Fitzau, August.**—Die Nordwestküste Afrikas, von Agadir bis St. Louis. Deutsche Geographische Blätter, herausgegeben von den Geog. Gesellsch. in Bremen, Bd. xi., pp. 223–264, with map. Also separately, 8vo, Leipzig: 1888.

This essay was originally presented as the Author's thesis for the degree of Doctor of Philosophy in the University of Leipzig.

1859. ——— Verzeichnis der seit dem xvi. Jahrhundert über die Nordwestküste von Afrika, zwischen Marokko und dem Senegal erschienenen Reisebesch. und Abhandlungen. (List of Authorities.) Deutsche Geog. Blätter, herausgegeben von den Geog. Gesellsch. in Bremen, Bd. xi., pp. 264–270.

1860. 1888. **Marokko.** — Meyer's Konversations-Lexikon, vol. xi., 5th ed., pp. 275–278.

1861. 1888. **Kerdec Chény, A. de.**—Guide du Voyageur au Maroc, et Guide du Touriste, par . . . . . accompagné d'une Carte du Maroc par Ch. Lasailly. Paris (printed at Tangier): 12mo, pp. 208.

The first attempt of the kind; useful, though not without some blunders. The author is the editor of the 'Reveil du Maroc.'

1862. 1888. **Harris, W. B.**—A Visit to Sheshuan. Proc. Roy. Geograph. Society, vol. vi., pp. 18–22.

1863. 1888. **Óvilo y Canales, Don Felipe,** Director of the Spanish School of Medicine at Tangier.—Estado actual de Marruecos. Conferencia dada en el Ateneo de Madrid el 17 de Abril. Bol. de la Soc. de Geogr. de Madrid, t. xxiv., pp. 257–290.

1864. 1888. **Cuevas, Don Teodoro de,** Vice-Consul de España en Larache.—La Ciudad de Uazzán. Extracto de la Obra inédito *El-Garb*, estudio geográfico, administrativo, comercial y agrícola de la region comprendida entre la Sierra de Gomara جبل غمارة el Atlantica y el Sebú واد سبوا en el reino de Fez. l. c., pp. 252–294.

1865. 1888. **Projet de Neutralisation** du Détroit de Gibraltar. R. Franç. de l'Étr. et des Colon., t. vii., p. 334.

This is a project for neutralizing the district of Tangier.

1866. 1888. **Petition** des Français à Mogador, l. c., p. 461, for adjourning the proposed Conference of Madrid.

1867. 1888. **Douls, Camille.**—Itinéraire chez les Maures Nomades. l. c., pp. 713–717, with map.

A notice of M. Douls' travels in the Tour du Monde.

1868. ——— Cinq Mois chez les Maures Nomades du Sahara Occidental Tour du Monde, vol. 27, Nos. 1422–3.

1869. ——— Voyages dans le Sahara occidental et sud-marocain (Conférence faite dans le grande salle de l'Hôtel-de-ville de Rouen, 7 Jan. 1888). Bull. de la Soc. normande de Géographie, Jan.-Fév. 1888). Also reprinted, Rouen: 4to, p. 38 (portrait and map), and Bull. Soc. Géogr. Lille, ix. p. 66, map.

M. Douls landed on the coast south of Morocco in 1887, and like previous adventurers in that region, was taken prisoner, and finally, after enduring great hardships, brought to the city of Morocco, where, through the agency of Sir W. Kirby Green (who happened to be there), he was freed. He attempted to make another journey in disguise, but was murdered at the early age of twenty-four. No. 1903. A detailed account of his adventures appeared in the Times (London), Oct. 11, 14, 1887, and the Globe (London), Dec. 30, 1887.

1870. ——— Le Sahara Occidental, entre le Tropic et le Oued Draa. Rev. de Géogr., xi., p. 255.

1871. ——— Excursion dans le Sahara Occidental. C. R. Soc. Géogr. Paris. No. 13, p. 442.

1872. 1888. **Borsari, Ferdinando.** — Geografia etnologica e storica della Tripolitania, Cirenaica e Fezzan con cenni sulla storia si queste Regioni e sul Silfio della Cirenaica. Torino, Napoli, Palermo: 8vo, pp. 278.

Though this work is not on Morocco, in the text and bibliography may be found much indirectly connected with that country, while the ethnological section has a direct bearing on it.

1873. 1888. **Perry, Harold A.**—Europe and Morocco, or the Western Question. Macmillan's Magazine, March, No. 341, pp. 391–400.

Largely on the subject of Protection and other political questions.

1874. 1888. **Boccard, Giulio di,** Capitano di stato maggiore.—Prima Missione nel Marocco da Tangeri a Fez. Cosmos del Prof. Guido Cora, vol. ix., p. 73 *et seq.* with plan of Fez.

This mission was under the command of Comm. S. Scovasso, and proceeded in 1872 to Tangier, to Fez, Mekenes, and Karia-el-Habessi. The account of an Excursion to Perigil Island is translated in Le Reveil du Maroc, 24th Feb. 1892.

1875. 1888. **Quedenfeldt, M.**—Eintheilung und Verbreitung der Berberbevölkerung in Marokko. Zeitsch. für Ethnologie, Berlin: Bd. xx., s. 98–130; 146–160; 184–210, with map and plate. Continued in Bd. xxi., s. 81–108. Trans. in abstract, Scottish Geographical Magazine, January 1889, pp. 41–43.

1876. 1888. **Bericht** omtrent een Internationaal Handelsmuseum te Tanger (also in French) in Verzameling van Consulaire en andere Verslagen en Berichten over Nijverheid, Handel en Scheepvaart. 'S Gravenhage, Gebroeders van Cleef. Jaargang 1888, p. 71.

1877. 1888. **Cassel, V. E.,** Consul-General te Tanger.—Report for 1886 (in English). l. c., p. 230.

1878. 1888. **Lassailly, Ch.**—Carte Spéciale du Maroc, avec notice géographique sur cet Empire. Scale, 1:3,000,000 or 41·6 geog. miles to an inch. Paris: March. 2nd Edit. 1892.

The same map appears in No. 1861, but without the statistics and descriptive matter along the margins.

1879. 1889. **Quedenfeldt, M.**—Mitteilungen aus Marokko und dem nordwestlichen Sahara-gebiete. Greifswald: 8vo, pp. 65.

1880. 1889. **Piesse, L.,** and **J. Canal.**—Tlemçen. Paris: 8vo, pp. 101, with many illustrations. Extracted from the Revue de l'Afrique française.

It contains much touching the early history of Morocco.

1881. 1889. **Thomson, Joseph.**—A Journey to Southern Morocco and the Atlas Mountains. Proc. R. Geog. Soc., vol. xi., No. 1, pp. 1–17, with map of South-Western Morocco.

A short account of an exploration, conducted, like all the author's expeditions, with singular intelligence and tact. He ascended some of the highest points of the Atlas, and his journey would have been more fruitful had he not been recalled to lead an expedition (which never came off) for the relief of Emin Pasha. See also Rev. Franç. de l'Étrang. et des Colonies, t. x., p. 88, and Bull. de la Soc. Languedocienne de Géogr.

1882. ——— How I reached my highest Point in the Atlas. [illegible] Words, January, p. 17.

1883. ——— Report to the Committee of the Brit. Ass. appointed to investigate the Geography and Geology of the Atlas range in the Empire of Morocco, with a list of the Plants and Coleoptera observed.

1884. ——— Explorations in the Atlas Mountains. Scott. Geogr. Mag., vol. v., pp. 169–180.

Short narrative of his journey from May to Sept. 1888, read before the Scottish Geographical Society.

1885. ——— Travels in the Atlas and Southern Morocco. A narrative of exploration. London: 8vo, pp. xviii. and 488; 68 illustrations and 6 maps.

The first three chapters are devoted to Tangier; the next four deal with the journey to Agadir and Mogador; thence through Shiedma to Saffi and Merakish. Mr. Thomson then crossed the Atlas at three different places, and ascended to a height of 13,000 feet. His information regarding the Jews is especially interesting.

1886. 1889. **Thomson, Joseph.**—Some Impressions of Morocco and the Moors. Journal of the Manchester Geographical Society, vol. v., pp. 101–119, with map.

1887. 1889. **Clodd, Edward.**—Thomson's Travels in Morocco. New Review, Sept., pp. 383–394.

1888. 1889. **Marokko.** — Getreideverschiffung zwischen den marokkanischen Häfen. Deutsches Handelsarchiv (Gesetzgebung), March Heft.

Zeitweilige Gestattung der Ausfuhr von Knochen. *Ibid.*, August Heft.

Larache: Handelsbericht, 1888. *Ibid.* (Berichte), April Heft.

Mazagan: Handelsbericht, 1888. *Ibid.*, May Heft.

Rabat: Handelsbericht, 1888. May Heft.

Tangier: Verkehr deutscher Schiffe, 1888. July Heft.

Mazagan: Verkehr deutscher Schiffe, 1888. *Ibid.*, July Heft.

Mogador: Verkehr deutscher Schiffe, 1888. *Ibid.*, July Heft.

1889. 1889. **Debeaux** and **Daulèz.** — Synopsis de la Flore de Gibraltar. Actes de la Société Linnéenne de Bordeaux, vol. xliie, 1888, and in a separate volume, Paris and Gibraltar: 8vo, pp. 261, with map and plate.

The plants which extend to the opposite coast of Morocco are noted.

1890. 1889. **Tangier Affairs, etc.**—These formed the theme of some useful articles in the Globe, March 8th, 27th, St. James' Gazette, March 18th, Graphic, Nov. 2nd (Cape Juby, by Mr. Donald Mackenzie, with views of the settlement), and a series of articles in the 'World' during Sept. and Oct., describing the Sultan's visit to Tangier. (Mrs. Cooke, No. 1987).

1891. 1889. **The Population of Morocco.**—Proc. R. G. S., vol. xi., p. 176.

A statement of the population given on the authority of the 'Réveil du Maroc.'

1892. 1889. **El Moghrib,** Arabic Weekly (Tangier). Editor, 'Aisa Farah. Became extinct Oct. 12th.

1893. 1889. **Boulenger, G. A.**—On the Reptiles and Batrachians obtained in Morocco by Mr. Henry Vaucher. Annals and Magazine of Natural History, vol. iii., pp. 303–307, iv., 16.

Twenty-three species from the vicinity of Tangier.

1894. 1889. **Crawford, J. V.** Morocco at a Glance. Lymington: 8vo. pp. 155.

Intended to popularize Morocco as a resort for winter visitors.

1895. 1889. **Rawlinson, Canon George.**—History of Phœnicia. London: 8vo, pp. xxii. and 583, with maps and illustrations.

Chapter i. treats slightly of the Phœnician colonies outside the Straits of Gibraltar, the principal of which was Tingis (Tangier).

1896. 1889. **The Picturesque Mediterranean:** its cities, shores, and islands. With illustrations on wood. 2 vols. [1889–91]. London: 4to.

First number, published in November 1889, contains an article on Gibraltar by **H. D. Traill,** with digressions to Tangier and Ceuta, and seven fine woodcuts of those places. The full-page view of Tangier is particularly good.

1897. 1889. **Un Viaje en el Sur de Marruecos.** — Bol. Soc. Geogr. Madrid, t. xxvi., pp. 346–351.

Notice of the journey made in 1888 by Mr. Joseph Thomson.

1898. 1889. **Brown, Robert.** — The Countries of the World, etc. London: 6 vols., 4to, with several hundreds of illustrations [n. d.].

The portion devoted to Morocco in the last edition is vol. vi., pp. 109–118, with four illustrations in the text. The latest issue of the work, of which there have been several editions, was begun in serial form in 1884 and finished in 1889.

1899. 1889. **Hay, Rt. Hon. Sir John Drummond, G.C.M.G.**—Morocco: its importance from its proximity to England, position on the Straits of Gibraltar, and its capabilities of becoming an important mart. Chamber of Comm. Journ., vol. viii., No. 94, Dec. 5, p. 282.

An address given by the author, for forty-two years British representative in Morocco, at a special general meeting of the London Chamber of Commerce, on the 13th Nov.

The same address was published in pamphlet form, as one of the Chamber of Commerce publications; 'Morocco,' 8vo., pp. 16.

1900. 1889. **Soller, Ch.,** Chargé de Missions en Afrique.—Langue Arabe de Maroc. Grammaire, Chrestomathie et glossaire. 2nd ed. Paris: 8vo.

1901. 1889. **Mackenzie, Donald.**—The British Settlement at Cape Juby, North-West Africa. Blackwood's Magazine (Edinburgh), vol. cxlvi., Sept., pp. 412–421.

1902. 1889. **Corning, Charles R.**—Aalesund to Tetuan. A journey. Paisley and London: 8vo, pp. vii. and 489.

The author is an American who travelled extensively in Europe, and made a short visit to Morocco.

1903. 1889. **Douls, Camille.**

This adventurous young traveller, journeying as a Mohammedan under the name of El-Hadj Abd-el-Melek, was murdered by his guides when going from Tangier to Tafilet, probably with the intention of reaching Timbuktu. See Proc. Roy. Geogr. Soc. Lond., vol. xi., No. 9, Sept., p. 561.

1904. 1889. **"Sarcelle" (C. A. Payton).**—Autumn Shooting at Mogador. Field, 5th Jan.

1905. ——— Battles and Breakages of a Bamboo. l. c., 5th Jan.

1906. ——— Barbelling in Barbary. l. c., 30th March.

1907. ——— Shooting round Mogador. l. c., 18th May.

1908. ——— Quail Shooting in Morocco. l. c., 7th Sept.

1909. 1889. **Baden-Powell, Capt. R. S.** — Pig-Sticking and Hog-Hunting. London: 8vo.

Pp. 146–147 refer to pig-sticking in Morocco.

1910. 1889. **Martinière, H. M. P. de la.**—Morocco. Journeys in the Kingdom of Fez and to the Court of Mulai Hassan, with itineraries constructed by the author, and a Bibliography of Morocco from 1844 to 1887. With a preface by Lieut-Col. Trotter, 93rd Highlanders. London: 8vo, pp. xvi. and 478, seven route-maps and plans.

This work is translated from the MS. of the author, and is a valuable contribution to the literature of Northern Morocco.

The Bibliography, a revision of No. 1705, is a supplement to Renou's very unsatisfactory catalogue; it is arranged alphabetically according to the names of authors, and contains 527 entries of works, though many are inaccurate and imperfectly given, and numerous references to maps and plans.

1911. 1889. **Constant, Benjamin.**—Tangier and Morocco Leaves from a Painter's Note-book. Harper's Mag., April, pp. 752–771. Illustrated.

The author, the famous French painter, accompanied M. Tissot, the French Minister, on his mission to the Emperor at Morocco. They went by sea to Mazagan. Its geographical value may be gauged by the writer calling the present Sultan, who succeeded in 1873, Sidi Mohammed, a mistake which until last year stood in Bradshaw's 'Continental Time-Tables.' He refers to a "desert" at Morocco, and makes numerous other blunders in his artistic rhapsodies.

1912. 1889. **Customs Tariff.**—Rates of Export and Import Duties in Morocco. Board of Trade Journ., vol. vi., p. 397.

1913. 1889. **Harris, Walter B.**—The local distribution of Tribes inhabiting the Mountains of North-West Morocco. Proc. Roy. Geog. Soc., vol. xi., No. 8, Aug., pp. 487–491, with map of N.W. Morocco.

The author travelled in N.W. Morocco in March and April, 1889 (after his visit to Sheshuan, see No. 1808), in company with the Sherif of Wazzan, who was of great assistance to him in placing the locality of each tribe on the map of the country.

1914. ——— The Land of an African Sultan. Travels in Morocco, 1887, 1888 and 1889. London: 8vo, pp. xii. and 338, with map and 26 illustrations; also large paper, with additional illustrations.

Narrative of journeys made in 1887–89. The author has not much that is new to tell. On one of his journeys he accompanied Sir W. Kirby Green, H.M. Minister to the court of the Sultan at Morocco city. See Sat. Rev., 3rd May, 1890, p. 542; and Athenæum, where some inaccuracies are pointed out.

1915. 1889. **Order in Council,** establishing a Consular Court for Morocco, signed at Windsor, 28th November, 1889.

1916. 1889. **White, Herbert E.**—Report on the Trade of Tangier and district for 1888. Dip. and Consular Reports, Ann. Ser., No. 582, pp. 23.

1917. 1889. **Payton, Chas. A.**—Report on the Trade of Mogador for 1888. No. 553, 8vo, pp. 23.

1918. ——— Report on the Agriculture of Mogador for 1888. l. c., No. 541. pp. 7.

1919. 1889. **Two Days at Tangier.** 'Time' (Magazine), Sept.

1920. 1889. **Thureau-Dangin, Paul.**—L'Entente Cordiale entre la France et l'Angleterre. Taïti et le Maroc (Février–Septembre, 1884). 'Le Correspondant,' t. 154, pp. 700–741.

Account of the bombardment of Tangier and Mogador.

1921. 1888–1889. **Houdas, O.** — Nozhet-Elhâdi. نزهة الحادي. Histoire de la Dynastie Saadienne au Maroc (1511–1670), par Mohammed Esseghir Ben Elhadj Ben Abdallah El-oufrani. Traduction française par O. Houdas. Paris: 8vo, pp. ٢١٥, vii. and 560. Publications of the École des Langues Orientales vivantes, iii. Série, vol. ii. Arabic text; iii. translation. See Nos. 345, 1755.

Nozhet-Elhâdi narrates the foundation of the Empire of Morocco as it exists at the present day, and is justly considered as one of the most valuable sources of the history of that country. This work has been copiously used by writers on Morocco. The present translation is based on three MSS., two of which M. Houdas obtained at Tlemsen, and the third is in the Government Library at Algiers.

1922. 1889. **Coyne, Commandant A.**—Le Sahara de l'Ouest. Étude Géographique sur l'Adr'ar et une partie du Sahara occidental. Rev. Africaine, t. xxxiii., No. 192, p. 1, *et seq.*

The recital of a journey made by three pilgrims to Mecca from Chingueti, in the country of the Adrar or Azrar, through Geryville in Algeria.

1923. 1889. **"Moger, Henri."**—Au Maroc. La Géographie, 18th March. Understood to have been written by Th. Belin.

1924. 1889. **Lavisse, Ernest.**—La Mission française en Maroc. Rev. Bleue, 22 Juin, p. 772, *et seq.*

An account of the mission of the newly-appointed French Minister, M. Patenôtre, to deliver his letter of credence to the Sultan.

1925. 1889. **Maroc, Les diverses Races** et leur répartition. Rev. Fr. de l'Étrang. et des Colon., t. ix., pp. 42, 106. Articles quoted from the 'Réveil de Maroc.'

1926. ——— Relations commerciales avec la France et la Voie Algérienne. l. c., p. 427.

1927. ——— Université Musulmane de Garaouïp à Fas. l. c., p. 490.

1928. 1889. **Picard, Edmond.**—El-Moghreb al Aksa. Une mission belge au Maroc. Bruxelles: 4to, pp. 422, fine illustrations in chromo-tint. See No. 1975.

1929. 1889. **Mhammed ben Rahal.**—À travers les Beni Snassen. Bull. Trim. de Géogr. et d'Arch. d'Oran, t. ix., pp. 1–50, with map.

The travels of an educated Arab in that part of Morocco bordering on the Algerian frontier, written with modesty and intelligence.

1930. 1889. **Delphin, G.**—Généalogies de Mouley Hassan, empereur du Maroc, et de Sidi Abd Es-Sellam, Chérif d'Ouazzan. t. ix., p. 193.

1931. 1889. **Maroc.**—Marché de Mogador en Janvier et Février. Mon. Off. du Commerce, 16 Mai. Extract from French Consular reports.

1932. 1889. **Robles, F. Guillén.**—Catalogo de los Manuscritos Arabes existentes en la Biblioteca Nacional de Madrid, 8vo, pp. 332.

Contains a list of 606 MSS.

1933. 1889. **Quedenfeldt, M.**—Die Corporationen der Ulêd Soïdi Hamed-u-Mûssa unter der Ormâ, in südlichen Marokko. Verhandlungen der Berliner anthropologischen Gesellschaft, 20th July. Berlin, 1889, pp. 572–586.

1934. 1889. **Krebs, W.**—Maghreb, das Land der untergehenden Sonne. Geogr. Rundschau, xi., pp. 202–207,

1935. 1889. **Rinn, Louis, Commandant.**—Les Origines Berbères: Études linguistiques et ethnologiques. Algiers: 8vo, pp. 412; Appendix and Index xxxix., with 6 folding plates of letters and alphabets.

This work, the author of which was formerly Chief of the Central Service for Native Affairs in Algeria, relates chiefly to the Berbers of that colony. But it occasionally discusses those of Morocco and the neighbouring country.

Some of his conclusions, *e.g.*, that of the Indian origin of some of the Berber races, are rather startling. He is, however, convinced that the débris of the Phœnicians, Greeks, Romans, Vandals and Arabs remain still in the Berber country, completely absorbed in that people, the vitality of which has defied invasion after invasion, and massacre after massacre. In short the Berbers, whether under their own name or under that of the Arabs, form the majority of the aborigines of Algeria, and are of an Indo-European race and tongue, the Iberian theory being evidently adopted by M. Rinn.

The native name of the town, so erroneously called the City of Morocco (Merakish), he traces (p. 332) to □ *ar* = *ur*, sons of ⊙ ⋈ *Kus*, Kush with ⊐ M., the prefix of names of the third form in the Berber tongue.

1936. 1890. **Recherche** des antiquités dans le Nord de l'Afrique: Conseils aux Archéologues et aux voyageurs. Paris: 8vo, pp. 252, with many cuts and plates and a map.

This excellent work, issued by the Comité des Travaux historiques et scientifiques aux correspondants du ministère de l'instruction publique, in addition to its indirect bearing on Morocco, contains a reprint (pp. 234–252) of the Itineraries of Peutinger and Antoninus. (Nos. 11, 212.)

1937. 1890. **Tangier and other parts of Morocco.**

These formed the theme of articles in the Times, May 26th, 27th and Sept. 24th.

1938. 1890. **Hooker, Sir Joseph, K.C.S.I.**—Obituary notice of Mr. John Ball, F.R.S. Proceed. Royal Geogr. Soc., vol. xii., p. 99.

Mr. Ball accompanied the author on his expedition to Morocco. See Nos. 1130, 1131, 1179, 1275, 1276.

1939. 1890. **Harris, Walter B.**—A Night in a Moorish Hammum. Blackwood's Mag., October.

1940. 1890. **Benites, C.**—Viaje por Marruecos. Revista Contemporanea, February, April, August.

1941. 1890. **Coello, Francisco.**—El Ksar-el-Acaber, por D. Teodoro de Cuevas. Bol. R. Acad. Hist., Madrid, vol. xvii., 5, pp. 353–384.

1942. 1890. **Lane-Pool, Stanley,** with Additions by **Lieut. J. D. J. Kelley,** U.S. Navy.—The Barbary Corsairs. London: 8vo, pp. 316, with numerous illustrations.

The author says: "The kingdom of Morocco is not strictly [?] a Barbary state, and its history does not belong to this volume. Nevertheless . . . a few words will not be out of place."

1943. 1890. **Beckman, Wilhelm.**—An Ambassador's Visit to Morocco. Ueber Land und Meer. Stuttgart: parts 1, 2.

1944. 1890. **Morocco.** The 'Times,' 24 September.

Letter from a correspondent who travelled during six months in the country, giving an account of a recent series of rebellions amongst the Berber tribes.

1945. 1890. **Brown, Robert.**—The Adventures of Thomas Pellow, of Penryn, Mariner (three-and-twenty years in captivity among the Moors). Written by himself and edited, with introduction and notes, by Dr. Robert Brown. London: 8vo, pp. 379, with illustrations.

This forms vol. iv. of the "Adventure Series." It was first issued in 1742, No. 366.

"The best of all the tales of captives among the Moors, once so common and so popular."—Sat. Rev., Dec. 27, p. 742.

This is a reprint of No. 366 divided into thirteen Chapters with an Introduction (pp. 46) on the history of the Salli Rovers, Christian Slaves, and Renegadoes, and a series of notes (pp. 333–372) on the geographical and historical allusions in the text. Pellow is mentioned in Braithwaite's Account of Mr. Russell's Embassy in 1727 as "one Pelleau, a young fellow of good family in Cornwal, but now turned Moor." He visited many places in the Atlas where no other European has been, and in his narrative may be found, often under an uncouth spelling and grievously bad Arabic, the names of geographical localities which did not get into maps for many years subsequently. Nearly the whole of Pellow's Narrative was reprinted in the Times of Morocco, No. 17 *et seq.*, under the title of "The Adventures of an Englishman twenty-three years a Slave in Morocco, A.D. 1715 to 1733. Related by himself."

1946. 1890. **Wake, Richard.**—A Selection of Sketches and Letters on sport and life in Morocco. London: oblong fol. [no date, but issued in Jan. 1890.]

Twenty-four lithographic sketches and portrait, some in colours, with brief descriptions.

Reviewed in Saturday Review, 1st March, p. 265, where it is said, "There is not a superfluous or unmeaning touch in the whole of these rapid and spirited records of sport and life in Morocco." The author was shot at Souakin at the age of twenty-three, while engaged as artist to the Graphic newspaper.

1947. 1890. **Some Moorish Mendicants.**—Chambers' Journal, November, pp. 635–7.

1948. 1890. **Playfair, Sir R. Lambert, K.C.M.G.**, H.M. Consul-General in Algeria.—The Mediterranean, Physical and Historical. Address as President of the Geographical Section of the British Association at Leeds. 8vo, pp. 15, reprinted in the Proc. R. Geogr. Soc., and in various other Geographical publications. Translated into French in the 'Rev. Sc.' (Rev. Rose), t. xlvi., p. 577: and into German in 'Export, Organ des Centralvereins für Handelsgeographie.' Berlin: xii. Jahrgang, nr. 48, p. 701 *et seq.*

This shows the continuity between the Atlantic region and the North Coast of the Mediterranean.

1949. 1890. **"Sarcelle" (C. A. Payton).**—Rod-Fishing for Sardines. Field, March 15.

1950. ——— The Tasergelt, the American Bluefish. l. c., June 14.

1951. ——— Warm Days with Bass. l. c., July 19.

1952. ——— Mogador Notes—Tasergelt, &c. l. c., Sept. 20.

1953. ——— Bitter Bad Luck. l. c., Oct. 11.

1954. ——— The Bluefish in Barbary. The American Angler (10 Warren Street, New York), June 28.

1955. ——— American Fish and their African Analogues. l. c., Sept. 13.

1956. ——— African Relatives of American Fishes. l. c., Oct. 25.

1957. ——— The Moorish Bluefish, &c. l. c., Nov. 15.

1958. 1890. **Cust, Robert Needham.**—Morocco. Asiatic Quarterly Rev., vol. x., pp. 87–112.

A popular account of Morocco, its races, government, and the Protégé System. The author only visited Tangier, in 1887. See No. 2013, where its inaccuracies are corrected.

1959. 1890. **Tyrrell, Colonel Frank H.**—The Barbary Corsairs. l. c., pp. 113–135; pp. 388–411; and vol. xi., pp. 438–457.

A Review based on Mr. Stanley Lane-Poole's 'The Barbary Corsairs,' Sir Lambert Playfair's 'Scourge of Christendom,' Père Dan's 'Histoire de Barbarie,' and the 'Tohfat ul Akhbar, or Maritime Wars of the Turks.' Very little of this narrative is specially devoted to Morocco.

1960. 1890. **Taramelli, T., and V. Bellio.**—Geografia e Geologia dell' Africa. Con sette carte. Milano: 8vo, pp. 334.

A fair sketch of the geography and geology of Africa, including Morocco, with a Bibliography of the geology (pp. 299–312) and of the geography (pp. 297–298), both very imperfect and inaccurate, many papers on India being inserted under the belief that the regions described were in Africa.

1961. 1890. **Browne, Harold Crichton.**—Two African Cities, with illustrations from Photographs. The English Illustrated Magazine, February, No. 77, pp. 396–402.

The cities are Mogador and Rabat-Salli.

1962. 1890. **La Revista de Marruecos.** — Spanish Fortnightly Illustrated (Tangier). Editor, Capt. Cervera y Baviera. Now extinct.

1963. 1890. **Maroc.** — Incident Américain. Rev. Franç. de l'Etrang. et des Colon.,' t. xi., p. 49.

This was the introduction of a case of rifles under the title of "Ferronnerie."

1964. 1890. **L'Allemagne au Maroc.**—l. c., p. 691.

A letter regarding the German Mission to Fez.

1965. 1890. **Litteau, Guerin de.**—Voyage circulaire (La Portugal, L'Espagne, le Maroc, Gibraltar et l'Algérie). Paris: 8vo.

1966. 1890. **Morocco.** — The Manufacture of Carpets. London: Chamber of Commerce Journ., July, vol. ix., p. 159. (Extract from a Consular Report.)

1967. 1890. **Payton, Chas. A.**—Report on the Trade of Mogador and district for 1890. Dip. and Cons. Reports, Ann. Series, No. 712, pp. 25.

1968. ——— Report on the Agriculture of the district of Mogador for 1889. Dip. and Cons. Reports, Ann. Series, No. 724, pp. 6.

1969. 1890. **White, Herbert.**—Report on the Trade of Tangier for 1889. l. c., No. 787, pp. 18.

1970. 1890. **Trade of Morocco** with the United Kingdom. Annual Statement of the U. K. with Foreign countries and British possessions. London: 4to.

1971. 1890. **Declaration** exchanged between the Government of Her Britannic Majesty and the Government of the French Republic with respect to Territories in Africa. Signed at London, August 5th, 1890. London: folio, pp. 3 (Blue Book, Africa No. 9, C—6130).

1972. 1890. **Loti, Pierre** (pseud. of Julien Viaud, Lieut. de Vaiss. et Membre de l'Académie).—Maroc. Paris: 8vo, pp. 358.

Brilliant account of a visit to Fez in 1889 in the suite of M. Patenôtre, French Minister. Leaving the Mission there, he returned with M. de V.[ialar] to Tangier by Mekenes. A special edition of only 20 numbered copies, with illustrations, also published.

1973. 1890. **Kirchhoff, Alfred.**—Die Berbers Marokkos. Petermann's Geog. Mittheilungen, t. xxxvi., pp. 23–26.

1973a. 1890. **Ellsworth, A.**—Mahomet's Birthday in Tangier. New York Christian Union, 9th January.

1974. 1890. **Seehausen, Otto.**—Siedlungen in der Sahara. Inaugural-Dissertation der Hohen Philosophischen Facultät der Universität Leipzig zur Erlangung der Doctorwürde. Bremen: 8vo, pp. 44. With map.

1975. 1890. **Broues, F.** — El-Moghreb al Aksa. La Société Nouvelle. Bruxelles: 31 Jan., pp. 95–102.

A Review of M. Edmond Picard's work, No. 1928.

1976. 1890. **Bouty, I.**—Notes complémentaires relatives à la Conférence sur le chemin de fer Trans-saharien faite au Congrès de Paris en 1889. Bull. Trim. de Géogr. et d'Arch. d'Oran, tome x., fasc. xliv., Janv.-Mars, p. 78–97, with map showing the proposed trace from Algiers and Oran to the Niger.

1977. 1890. **Bonnet, Dr.**—Les Qçours du Sud-Ouest Oranais. Ass. Franç. pour l'Avanc. des Sciences, Compte-Rendu de la 18me session à Paris, 1889. Seconde Partie, pp. 888–897.

After describing the physical geography of the region, the writer states his opinion that the construction of a Trans-Saharan railway would encounter fewer difficulties and complications in the countries nominally under the Sultan of Morocco than if it passed through Turkish territory south of Tripoli.

1978. 1890. **"Vasili, Comte Paul."**—Le Vrai Maroc. Nouv. Rev., Paris: t. 66, pp. 474–482.

A short account of the country, containing *nothing* new regarding it.

1979. 1890. **Parquet, L.**—Essai de Guide Élémentaire pour reconnaître décrire, compléter et dater les Inscriptions Romaines en tenant plus particulièrement compte des Monuments épigraphiques des anciennes provinces Africaines, Afrique, Numidie, Maurétanie. Rev. Afr., Nos. 197–198, pp. 81–192, with 61 figures of Roman inscriptions.

An excellent *vade-mecum* for the use of those unfamiliar with Roman epigraphy.

1980. 1890. **Maurique, Antoine-Marie.** — Le Périple de Hannon. Rev. Géogr. Internat., No. 173 *et seq.*

The author does not attempt to fix the date of this celebrated voyage, but merely to show the possibility of it, and the errors committed by previous commentators.

1981. 1890. **Basset, René.**—Loqmân Berbère. Avec quatre Glossaires et une étude sur la légende de Loqman. Paris: 12mo, pp. xcviii. and 409.

This reunites in one volume the various texts collected by the author during the course of his numerous missions in Algeria, Tunis, Morocco, Senegal and the Sahara. It contains the fables of Lokman translated into the dialects spoken by 23 Berber tribes, including the natives of the Rif, Tarudant and Dubdu.

1982. 1890. **Duveyrier, Henri.**—La Mort de l'Explorateur Camille Douls au Sahara. Ext. du Compte-Rend. des Séances de la Soc. de Géogr. 22 Nov. 1889. Rev. de Géogr., t. xxvi. pp. 132–136.

M. Douls intended proceeding from Merakish to Timbuktu in disguise, but like Roentgen and Davidson (No. 609) was murdered at an early stage of his journey (Nos. 1869, 1903).

1983. 1890. **Mackenzie, Donald.**—The Protégé System in Morocco. London: 1809, 8vo, pp. 58.

1984. ——— La última parte desconocida del litoral del Mediterráneo. El-Rif. Bol de la Soc. Geogr. de Madrid, t. xxviii., p. 58.

The author went from Oran to Melilla, and made a vain attempt to penetrate the Rif country. He gives all the information that he could compile regarding it. M. Duveyrier died in April, 1892.

1985. 1890. **"Vernon Lee" [Violet Paget].**—Sketches in Tangier. The New Review, London, March, pp. 221–228.

1986. 1890. **Brinton, Daniel G., Prof.**—On Etruscan and Libyan Names: a comparative study. Proc. American Philos. Soc., vol. xxviii., Feb. 10. Also separately, Philadelphia: 8vo, pp. 16.

An endeavour to prove that the Etruscans were Berbers.

1987. 1890. **"Collins, Mabel" [Mrs. Cooke].**—Ida: an Adventure in Morocco. London: 8vo.

A story founded on a trip from Tangier to Tetuan. The same lady was the author of the articles on Tangier and Tetuan entitled "Tangerines" which appeared in the 'World' in September and October 1889, signed "Flower o' the May."

1988. 1890. **Quedenfeldt, M.**—Verständung durch Zeichen und das Gabärdenspiel bei den Marokkanern. Verhandlungen der Berliner anthropologischer Gesellschaft, May 17, Berlin, 1890, p. 329.

1989. 1890. ——— Wie die Udâia Mohammedaner wurden. 'Das Ausland' (Stuttgart), No. 41 (13th October), p. 808.

1990. 1890. **Virchow, Rudolph.**—Ueber süd-marokkanische Schädel. 'Zeitschrift für Ethnologie,' Berlin, Nov. 25th.

1991. 1890. **Christmastide** at Tangier. Temple Bar Mag. No. 356, July.

1992. 1890. **Deporter, Commandant V.**—Apropos du Trans-saharien: Extrême-sud de l'Algérie, le Gourara, le Touat, In-Salah, le Tidikelt, le pays des Touaregs, l'Adrar, Tin Bouctou, Agadès. Alger: 8vo, pp. 473, with a map $\frac{1}{5000000}$.

Contains much about the semi-independent and disputed frontier-country of Algeria and Morocco.

1993. 1891. **Schnell, Paul.**—Das marokkanische Atlasgebirge. Quellenmässig dargestellt. With map. Das Sultanat Marokko. Entworfen und gezeichnet von .... Scale of map, 1:1,750,000, with an index. Umgebung von Morokko [Inset]: Scale, 1:1,000,000. Petermann's Geographische Mitt. Ergänzungsheft, No. 103. Gotha: post 8vo, pp. 119.

[Actually issued 15th January, 1892.]

1994. 1891. **Brown, Robert.**—Morocco, Morocco City, and Mogador. Chambers' Encyclopædia (Edinburgh), vol. vii., pp. 244, 315–318.

1995. ——— Morocco: The Land of Muläi El Hassan. Chambers' Journal (Edinburgh), vol. viii., No. 407, Oct. 17, pp. 657–60.

1996. 1891. **Mackenzie, Donald.**—The Protégé System in Morocco. Blackwood's Magazine, No. 904, Feb., pp. 277–290.

The author visited Merakish (City of Morocco); he advocates the abolition of the Protégé System and the establishment of international tribunals, but he admits that no good can be expected without a reform of the Shereefian government, the worst in the world.

1997. 1891. **Moroccan Affairs and Morocco.**

These formed the subject of an increasing number of articles in the English press. Among others may be noted, The Daily Graphic, April 21st, June 2nd, 3rd, August 15th, 17th; Times, March 3rd (Sir W. Kirby Green).

1998. 1891. **Harris, Walter B.**—Some further Notes on North Morocco, Proc. R. Geogr. Soc., vol. xiii., p. 164–168.

Narrative of a journey from Fez to Wazzan.

1999. 1891. **Cora, Guido.**—Carta di una parte interna del Marocco-Nord, secondo le esplorazioni di Tissot, de Foucauld, di Boccard, des Portes e. a. construtta di desegnata da . . . . (Scale, 1 : 300,000.) Cosmos, vol. x., 1890–91, Tavola vi.

2000. 1891. **El Diario de Tanger.** Spanish Daily. (Tangier.)

This paper has its own press.

2001. 1891. **"Sarcelle" (C. A. Payton).**—1890 on Mogador Waters. Field, Jan. 10.

2002. ——— Brent and Bernicle Goose at Mogador, l. c., Feb. 28.

2003. ——— Brisk Sea Angling, l. c., June 2.

2004. ——— Report for the year 1890 on the Agriculture of the District of Mogador. F. O. Annual Series of Dip. and Cons. Reports, No. 874, pp. 10.

Gives a curious account of the "sacred citron," and of the ravages of locusts.

2005. 1891. **Payton, C. A.**—Report on the Trade of Mogador for 1890. l. c., No. 857, pp. 28.

2006. 1891. **Marokko**:—Gestattung der Ausfuhr von Weizen und Gerste. Deutsches Handelsarchiv (Gesetzgebung), May Heft.

Verbot der Verwendung gewisser Namen zu Aufschriften für die Einfuhrwaaren. *Ibid.*, May Heft.

Ausfuhrzolle für gewisse Essenzen (Kümmel, Thymian, etc.). *Ibid.*, July Heft.

Handelsvertrag zwischen Deutschland und Marokko. *Ibid.*, September Heft.

Casablanca: Handelsbericht, 1889. *Ibid.* (Berichte), March Heft. Handelsbericht, 1890. *Ibid.*, August Heft. Verkehr deutscher Schiffe, 1890. *Ibid.*, July Heft.

Larache: Handel und Schifffahrt, 1889. *Ibid.*, March Heft. Handel und Schifffahrt, 1890. *Ibid.*, May Heft. Verkehr deutscher Schiffe, 1889. *Ibid.*, March Heft. Verkehr deutscher Schiffe, 1890. *Ibid.*, May Heft.

Mazagan: Handelsbericht, 1889. *Ibid.*, April Heft. Handelsbericht, 1890. *Ibid.*, May Heft. Verkehr deutscher Schiffe, 1889. *Ibid.*, April Heft. Verkehr deutscher Schiffe, 1890. *Ibid.*, May Heft.

Mogador: Handelsbericht, 1889. *Ibid.*, April Heft. Handelsbericht, 1890. *Ibid.*, August Heft. Verkehr deutscher Schiffe, 1889. *Ibid.*, April Heft. Verkehr deutscher Schiffe, 1890. *Ibid.*, July Heft.

Rabat: Handelsbericht, 1889. *Ibid.*, April Heft. Handelsbericht, 1890. *Ibid.*, May Heft. Verkehr deutscher Schiffe, 1890. *Ibid.*, May Heft.

Saffi: Handelsbericht, 1890. *Ibid*, May Heft. Verkehr deutscher Schiffe, 1890. *Ibid.*, May Heft. Verkehr deutscher Schiffe, 1889. *Ibid.*, July Heft.

Tangier: Waaren und Schiffsverkehr, 1889. *Ibid.*, August Heft.

Tetuan: Waaren und Schiffsverkehr, 1889. *Ibid.*, August Heft.

2007. 1891. **Development of German Trade with Morocco.**—Report by Belgian Consul at Tangier, quoted in 'Board of Trade Journal,' vol. x., No. 37, p. 426.

He gives the value of the imports from the principal countries of Europe.

2008. 1891. **Kol Israel.** — Hebrew Weekly (Tangier). Editor, Salomon Benâïoun.

2009. 1891. **Quedenfeldt, M.**—Krankheiten, Volksmedizin u. abergläublische. Kuren in Marokko. 'Das Ausland,' vol. 4. pp. 75–9; 5, pp. 95–98; 8, pp. 126–9

Lieut. Quedenfeldt died in Berlin in Sept. 1891, of fever contracted during his last journey in Morocco.

2010. 1891. **Goss, Charles F.**—Morocco: The World's last market. The Nineteenth Century, June, pp. 1016–1021.

Written by the Special Correspondent of the Morning Post, advocating the opening up of the country to European commerce.

2011. 1891. **Guiraudon, C. de, Captain.**—Summary of Research in African Languages since 1883, read before the Oriental Congress in London, Sept. 9th, though printed in advance in Asiatic Quarterly Review, July, n. s., vol. ii., p. 183. Also separately, London: 8vo, 1891.

2011a. 1891. **Lavoix, Henri.**—Catalogue des monnaies musulmanes de la Bibliothèque nationale. Paris: 2 vols., 8vo. A most important work: the coinage of Morocco is described in vol. ii.

2011b. 1891. **Dicriks.**—Die wirthschaftliche Lage Marokkos. Unsere Zeit, Nov., pp. 398–418.

2012. 1891. **Meakin, Budgett.**—An Introduction to the Arabic of Morocco: English-Arabic vocabulary, grammar, notes, etc. Tangier: 8vo, pp. xiii. 256.

This useful little work forms No. 1 of a "Morocco-Arabic Series" contemplated by the same author, and is the first book ever printed in Morocco, some of its predecessors (pamphlets and the like), though bearing "Tangier," and even, like the political satire "Le Carnival de la Barbarie et le Temple des Yvrognes, par M. de M. . . . ." (two parts, pp. 67 and 64, 8vo, 1765) "imprimé à Fez en Barbarie" on the titlepage, being printed elsewhere.

2013. ——— The Truth about Morocco, by the late acting editor of the Times of Morocco. Asiatic Quarterly Review, July, p. 83.

A reply to and correction of Dr. Cust's paper, No. 1958.

2014. ——— Morocco as a Field for Geographers. Proceedings of the British Association (Geographical Section) at Cardiff, 21st August. Report p. 716; also Proc. R. G. S., vol. xiii., p. 630.

A critical review of what had been done to explore the country.

2015. ——— The Morocco Berbers. Proceedings of the Oriental Congress in London, Sept. 9th. Asiatic Quart. Rev., Oct., n. s., vol. ii., p. lxxix.

This paper is for the most part an abstract of one read before the Anthrop. Sect., British Association, at Cardiff in August. Report, p. 804. Also read before the Manchester Geographical Society, Jan. 1892.

2015a. 1891. **Meakin, Budgett.**—Die Juden in Marokko. Jüdische Litteraturblatt, No. 52.

2016. 1891. **Rolleston, Charles, Captain.**—To-day in Morocco. National Review, July, pp. 649–664.

2017. 1891. **Bouty, J.**—Chemin de fer Trans-saharien. Avant-Projet concernant la section entre Aïn-Sefra et Igli. Bull. Trim. de Géogr. et Arch. d'Oran, t. xi., pp. 127–139.

The author argues in favour of the line from Oran to Igli, thence to Timbuktu and the Niger.

2018. 1891. **Colonieu, Colonel.**—De Geryville à Figuig. l. c., pp. 294–318. With map. Journal of the march made in February 1868, and the official report of the commander.

2019. 1891. **Rouire, L.**—Le Sud-ouest Oranais et **le Touat.** l. c., pp. 333–368, with map.

2020. 1891. **Marial, Waille.**—De Tanger à Tunis. Notes et Croquis. l. c., pp. 472–543.

The portion regarding Morocco is from pp. 472–480. Mere traveller's impressions.

2021. 1891. **Broussais, Émile.**—De Paris au Soudan—Marseille—Alger—Trans-saharien. Avec la Carte d'Afrique indiquant les possessions et les zones d'influence de tous les États Européens, de Fr. Schrader, et cinq photogravures inédites de Gervais Courtellement. Alger, Paris: 8vo, pp. 296.

A mere compilation, of no especial value.

2022. 1891. **Le Chatelier, A.**—Tribus du Sud-Ouest Marocain. Bassins côtiers entre Sous et Draa. Publications de l'École des Lettres d'Alger. Bull. de Corr. Afr., vi., 8vo, pp. 89.

2022a. 1891. **Soller.**—Le Maroc et le Soudan occidental—l'Ile d'Arguin. Bull. de la Soc. de Géogr. de Lyon, t. viii., No. 5, pp. 433–439.

2023. 1891. **Delphin, M.**, Professor à la Chaire d'Arabe à Oran.—L'Astronomie au Maroc. Journ. Asiatique, 8me Sér., t. xvii., pp. 177–201, with an illustration of a Moroccan Astrolabe of the xii. cent. of the Hegira, brought to Europe by M. Erckmann. See No. 1622.

2024. 1891. **Stähelin, Alfred.**—In Algerien, Marokko, Palästina und am Roten Meere. Reiseskizzen, mit 5 Karten. Basel: 1891, 8vo.

Of the 461 pp., the "Erlebnisse in Morokko," Mogador to Merakish and the usual route up the coast to Tangier, occupies from pp. 162 to 341.

2025. 1891. **Muro, Angel.**—Ocho Días en Tánger. Impresiones de un viaje agradable y corto de cuatro buenos amigos sin equipage. Madrid: 12mo, pp. 63.

A reprint of articles which appeared in La Época, El Resumen, and La Libertad.

2026. 1891. **Boulenger, G. A.**—A Catalogue of the Reptiles and Batrachians of Barbary (Morocco, Algeria, Tunisia) based chiefly upon the Notes and Collections made in 1880–1884 by **M. Fernand Lataste.** [The Morocco species chiefly from specimens in the British Museum.] Trans. of the Zool. Soc. of London, vol. xiii., part iii., Nov., pp. 95–164, with 6 plates (Plates xiii.–xviii.), including 44 figures.

This valuable contribution to the natural history of Barbary was undertaken by Mr. Boulenger of the British Museum on the departure of M. Lataste to occupy the post of Professor of Zoology in Chili. It contains

remarks on the natural divisions of the country and a bibliography of works on its Herpetology. Of the 74 species described, 44 occur in Morocco.

2027. 1891. **Finck, Henry T.**—Spain and Morocco: Studies in Local Colour. London: 8vo, pp. 182.

The author—an American—made the usual tour from Tangier to Tetuan. His knowledge of Morocco and its literature may be presaged from his claiming originality for his chapter on the latter well-known town from the fact that neither De Amicis (No. 1231) nor Pierre Loti (No. 1972) describe it. Neither of these volumes, descriptive of embassy journeys, had occasion to touch on the country near Tetuan.

2028. 1891. **Caine, Hall.**—The Scapegoat: a romance. London: 8vo, 2 vols. pp. 258+314. Recast in 1 Vol., 1892.

A story chiefly concerned with Jewish Life in Morocco, originally published in the Illustrated London News, with fine illustrations by Forestier. The author visited Morocco in March-April 1891, with a view to the accuracy of his local colouring, and his facts were supplied and revised by various competent authorities; reviewed in Academy, Oct. 3rd, with some philological and historical corrections by Budgett Meakin. It gives a vivid and in general truthful picture of Judæo-Moorish life; but its historical accuracy is at fault in the cardinal point that instead of Mowlai Abd-er-Rahman being present in Tetuan when it was captured, he died three months before that event.

2029. 1891. Muley Hassan's Elephant. Standard (London), Sept. 8th, 15th, 24th, Oct. 8th.

These letters describe the march from Tangier to the Sultan's camp in the Zemur country with the elephant "Stoke" presented to his Sherifian Majesty by the Queen of England. They contain much information regarding the country and the Moorish army. Leading articles on the same subject appeared in the Standard, June 11th and Oct. 8th.

2030. 1891. **Haliburton, R. G.**—Dwarf Races and Dwarf Worship in prehistoric times. Proceedings of the Oriental Congress held at London on the 2nd of September. (Fully reported in the Times, Sept. 2nd.) The same paper was read before the American Association for the Advancement of Science in August, 1891.

The author describes the dwarfs of the Atlas from hearsay; he believes them to be descended from the Troglodytes of Herodotus. They are reputed to be under four feet in height, and to inhabit the region near the source of the Wad Draa. There is a leading article on this paper in the Standard (London) of the 4th September, and a letter from Archibald Fairlie, engineer to the late Emperor of Morocco, on Sept. 5th, both decidedly sceptical as to the existence of any such race. Mr. Haliburton has a letter in the same issue defending his views. In the 'Times,' Sept. 14th, there is another letter by Mr. Haliburton, explaining the subject still further, and one by Mr. W. B. Harris rather favourable to the existence of these dwarfs. On Sept. 17th Mr. Budgett Meakin replies, pronouncing entirely against Mr. Haliburton's contentions. On Sept. 21st Mr. Haliburton rejoined, and on the same date there was a leading article, the gist of which was that nothing in the shape of proof had been produced in favour of the supposed tribe of Atlas dwarfs. This article, with Mr. Meakin's letter, was reproduced with some additions in the Times of Morocco for Oct. 3rd. The latest article on the subject—also unfavourable to the existence of the dwarfs—is by H. Crichton Browne, in

Nature, vol. xlv. (Jan. 21st, 1892), pp. 269–270, dated, Macloustie Camp, Bechuanaland, Nov. 15th, 1891.

Mr. Haliburton's paper "will, it is hoped, be published in the Transactions of the Oriental Congress, when the controversy to which it gave rise will have led to some conclusion" (Asiatic Quarterly Rev., Oct., 1891, p. xxvii.).

2031. 1891. **Hay, The Right Hon. Sir John Drummond.**—Letter from, on Mr. R. G. Haliburton's Dwarf Races and Dwarf Worship. 'Asiatic Quarterly,' Oriental Congress Number, October, n. s., vol. ii., pp. 421–423.

This communication is favourable to the existence of a dwarf race.

2032. 1891. **Haliburton, R. G.**—The Dwarfs of Mount Atlas. Statements by natives of Morocco and of European residents there as to the existence of a Dwarf Race south of the Great Atlas with notes on Dwarfs and Dwarf History. London: 8vo, pp. 41.

Contains in addition to the "statements," the paper No. 2030, and Sir John D. Hay's letter, No. 2031.

2033. 1891. **Sievers, Wilhelm, Prof. Dr.**—Afrika. Eine allgemeine Landeskunde. Leipzig u. Wien: 4to, pp. 468.

Morocco is described, with four illustrations in the text and one plate, on pp. 330–338.

2034. 1891. **Simonet, Prof. F. J.**—A Critico-Historical Essay on the Arabo-Hispanic Woman, and a Dissertation on the Hispano-Mozarabic Dialect. Prepared for the Oriental Congress in London. Granada: imp. 8vo.

2035. 1891. **Bissuel, Commandant H.**—Ancien Chef du Bureau Arabe. Le Sahara Français. Conférence sur les questions Sahariennes faite les 21 et 31 Mars, 1891, à MM. les officiers de la Garnison de Medéa. Alger: 8vo, pp. 214, with map and *fac-similes* of Touareg inscriptions.

The author says of his work: "Le travail n'était pas destiné à la publicité. Rédigé sans prétention littéraire ni scientifique . . . ." Amongst other matters he gives an account of the Oases of Gurara, Tuat and Tidikelt, at p. 72 he states his opinion relative to "notre situation vis-à-vis du Maroc," "Les droits du Maroc sur ces contrées sont illusoires," "Intrigues Marocaines," &c.

2036. 1891. **Stutfield, Hugh E. M.**—The Brethren of Mount Atlas. Being the First Part of an African Theosophical story. London: 8vo, p. 313.

The title sufficiently indicates its nature. It utilises the Mahatmas, Gurus, and so forth of "Theosophy," in the story of a journey to Pliny's Mount Atlas, to embody much personal knowledge of Morocco.

2037. 1891. **Kan, C. M., Prof.**—De Pereplous van Hanno. Tijdschrift van het Koninklijt Nederlansch Aardrijks-kundig Genootschap, Jaargang 1891. Also separately, Amsterdam: 8vo, p. 55.

Prof. Kan's identifications of places do not differ widely, if at all, from those made by his predecessors (Nos. 1, 392). Thus his Θυματήριον is made out to be, as most commentators had previously identified, Mehedia or Mamora; his Λίξος ποταμὸς μέγας with the Wad Draa; the Χρέτης—the same as the Χρεμέτης of Aristotle—with the Seget-el-Hamra (opposite the Canary Islands); the Θεῶν Ὄχημα with the Kakoelemah Mountain near the Bay of Sangareah (a very random shot); and the Νότου Κέρας, a promontory in the neighbourhood of the island of Sherboro.

2038. 1891. **Deporter, Commandant V.**—La Question du Touat. Sahara Algérien, Gourara, Touat, Tidikelt, Caravanes et Trans-saharien. Alger: 8vo, pp. 67, with map $\frac{1}{1800000}$. See also No. 1992.

This contains an amplification of two lectures given to the garrison of Algiers in May 1891, on a subject which greatly excites public opinion both in Algeria and France. The "Question of Tuat" is one which has been constantly discussed in the French press during the past year. The French deny that there is any such place as a *Sahara Marocain*; they contend that according to the treaty of 1845 the last Moroccain villages are Figig and Ische (Art. 5). Article 6 states "Quant au pays situé au sud des ksours des deux Etats, comme il n'y a pas d'eau, qu'il est inhabitable et que c'est le desert, la délimitation en est superflue . . . ." Therefore the oases to the south are either independent of the Sultan of Morocco, or belong to them, or both. The solution will probably be according to "the simple plan, that those should take who have the power, and those should keep who can." The French believe that Tuat is necessary to them for the Trans-saharan Railway, but no one with the most elementary knowledge of the country believes that the railway in question can be of the least use to them.

2039. 1891. **Maroc.**—Rapport sur le commerce de Mogador. Bull. Consul. français, fascicule 5, vol. xxii. November.

2040. 1891. **Esclavage au Maroc.**—Rev. Franç. de l'Étrang. et des Colon. t. xiii., p. 684. Regarding a letter addressed to the Times by Mr. Allen.

2041. 1891. **Le Maroc au Touat.** l. c., pp. 390; 401.

2042. 1891. **Africanus.**—Les compétiteurs de la France en Afrique. l. c., pp. 476–78. With a map, taken from M. Fock's work, No. 2053.

2043. ——— La France au Maroc. l. c., pp. 617–621.

2044. 1891. **Marbeau, Édouard.**—Au Sahara. La Marche sur In Salah. l. c., pp. 465–472, with map.

2045. 1891. **Bellaire, Édouard Michaux.**—Maroc et Touat—M. Patenotre au Maroc. l. c., pp. 519–525.

A review of his work while French Minister in Morocco. Followed by the Treaty of 1845 for the delimitation of the French frontier.

2046. 1891. **Sidi, Le Touat.**—In Salah Igli. l. c., pp. 525–527.

2047. 1891. **Marocains au Touat.** l. c., p. 598.

2048. 1891. **Sabatier, Camille.**—Touat, Sahara et Soudan. Bull. de la Soc. Géogr. Comm. de Paris, t. xiii., pp. 99–103. With an excellent map.

2049. ——— Touat, Sahara et Soudan. Etude geographique, politique, et militaire. With map. Paris: 8vo, pp. 336.

2050. 1891. **Martinière, H. de la.**—M. de la Martinière reports to the Académie des Inscriptions et Belles-Lettres the results of his last journey to Sus, and the archæology of the mountainous region of Djebel Zerhoûn, and especially of Volubilis, where he has been excavating for several years. Comptes-Rendus, t. xix., pp. 348. See also his researches on the site of Lixus, in Bull. Arch. du Comité des Trav., Hist. et Sc., t. viii., pp. 134–148, and 451. Plates vii.–x.; xxv.

2051. 1891. **Blanckenhorn.**—Die Geognostischen Verhältnisse von Afrika. I. Teil; Der Atlas das nordafrikanische Faltengebirge. Peterm. Geogr. Mitteil. Ergänzungsheft, No. 90. With map.

2052. 1891. **España en África.**—Memoria dirigida al Gobierno por las Sociedades Geográfica de Madred y Española de Geografía Commercial. Bol. de la Soc. Geogr. de Mad., t. xxx., pp. 12–22.

2053. 1891. **Fock, A.**, Ingénieur civil de l'Est Algérien.—Algérie, Sahara, Tchad. Réponse à M. **Camille Sabatier**, avec un introduction de M. **Georges Rolland** et des lettres de MM. le Colonel **de Polignac** et le Capitaine **Bernard**, Paris: 8vo. pp. 75. With a map of French Africa.

The author is a warm supporter of M. Rolland's scheme for a Trans-Saharan Railway; his trace starts from Biskra, passes by the Wad Rin Tuggurt, Wuargla, Timassinr, Amadghor, Assiu, Agadès and so to Lake Chad; but after much discussion he modifies it so far as to adopt three standing-points, Algiers, Biskra and Ain Sefra, and proposes that the work should be constructed by a chartered company.

2054. 1891. **Bouty, J.**—Encore la Question du Trans-saharien. Quelques mots en réponse à la brochure de M. Fock. Bull. Trim. de Géogr. et d'Arch. d'Oran., t. x., p. 545–559.

He strongly urges the occupation of Tuat, "si l'on veut barrer le passage aux Anglais, dont l'installation sournoise au Cap Jubi vise la grande vallée de l'Oued-Dra, qui les conduirait alors à Igli avant nous."

2055. 1891. **Payton, Charles A.**—On the occurrence of *Bernicla brenta* at Mogador. Ibis: pp. 296–297.

2056. ——— On the occurrence of *Hydrochelidon leucoptera* in Morocco. Ibis: pp. 464–465.

2057. 1891. **Fagnan, E.**—L'histoire des Almohades d'après 'Abd el-Wâh' id Merrâkechi. Rev. Afr. t. xxxv., p. 207 *et seq.* See also Nos. 19, 712.

A translation of the original text published by Dr. Dozy.

2058. 1891. **Henty, George A.**—Hold Fast for England. London: 8vo.

A story of the Siege of Gibraltar in 1779–83, in which the hero is brought to Tangier, where he performs a variety of daring and romantic deeds.

2059. 1891. **Reeves, Edward.**—Homeward Bound. A colonist's impressions of New Zealand, Australia, Tangier and Spain. London: 8vo.

2060. 1891. **La Conquista** de Marruecos en el ano 1893. Estudio de la ultima compana llevada a cabo por franceses, ingleses y alemanes, en el Imperio de Marrueccos. Madrid: 8vo.

This brochure—of the "Battle of Dorking" type—is signed by "A Kaïd er Rhâa, Colonel in the Army of the last Sultan," and affects to be a translation into Spanish by El Mercantil Valenciano (Journal), and be dated at Tangier, 1894. Most of it is translated in Le Reveil du Moroc, March 2nd and 9th, 1892.

2061. 1891. **Héron de Villefosse, Ant.**—Rapport sur les découvertes faites au Maroc, et principalement à **Volubilis** par **M. de la Martinière.** Bull. Arch. du Comité des Trav., Hist. et Sc., t. ix., p. 135–156.

These consist of forty-three inscriptions recently collected at Volubilis by M. de la Martinière. The full result of his most recent explorations are not yet before the public. M. Cagniat says of them:—"M. de la Martinière a continué pendant toute cette année (1891) ses persévérentes et audacieuses explorations au Maroc. Dans la première partie de sa campagne il a fouillé les nécropoles de la ville romaine de Volubilis; il y a rencontré des textes épigraphiques latins, grecs, et même une épitaphe hebraïque. Il a ensuite exploré le Sous, l'Atlas et visité la ville encore peu explorée de Taroudant; revenu à Fez, il est reparti de là pour l'Algérie en suivant la route de Fez à Oujda. Cette belle campagne archéologique honore grandement son auteur.

Une des conclusions les plus importantes qui ressortent dès maintenant de ce voyage, dont les détails sont encore inconnue, est que la domination romaine, dans la Maurétaine Tingitane s'étendit beaucoup plus au sud qu'on ne le croyait jusqu'ici." l. c. p. 550.

2062. 1891. **Salisbury, Marquess of.**

We cannot better conclude this catalogue of works and articles on Morocco than by quoting the remarkable words pronounced by Lord Salisbury at Glasgow on the 20th of May, and which were quoted by all the organs of the press throughout England on the following day, and commented upon (*inter alia*) in two illustrated articles in the Daily Graphic, June 2nd and 3rd, entitled: "The Question of Morocco."

"Morocco still remains the home of the worst abuses, of the greatest cruelty, of the greatest ignorance and backwardness in all that conduces to prosperity or humanity. It is there that we hear of the most terrible cruelties, and we have no power to prevent them, and some day or other—there is no danger threatening now, or I should mention it—but some day or other Morocco will be as great a trouble to Europe, and will carry with it as great menace to the peace of Europe, as the other Mohammedan communities farther to the East used to twenty or thirty years ago."

PUBLIC RECORDS.

State Papers connected with Morocco in the Public Record Office.

I.—Foreign Office Documents.

2063. Modern Royal Letters.—Second Series. Emperor of Morocco 1564–1737. Numbered 34.

This contains a number of original letters from the Sultans of Morocco, generally with Spanish translations; interesting in themselves and beautiful specimens of caligraphy.

2064. No. 1. 1575–1669. Letters from Mr. Prynne, Captain John Harrison, Captain Penn, Admiral Stokes, Admiral Warren, and Lord Henry Howard.

The series commences with memoranda of events connected with Morocco from 1577 to 1662. The first document of importance is "A declaration of the battayle betwyxte the Kynge of Barbarie and the Kynge of Portingale, the 4 of August last, 1578." Then follow, "Capitulation propounded by the Governors of Sallie," negotiated by Capt. Harrison $\frac{\text{A.D. } 1627}{\text{A.H. } 1036}$. Reports from the various officers before named; information regarding the occupation of Tangier, and papers connected with the release of captives, with lists of their names.

2065. No. 2. Miscellaneous Foreign Papers, 1586–1789, unbound. Contains numerous reports from Captain John Harrison and other envoys; petitions from captives; the establishment and pay of H.M. forces in Morocco; some of the 'Conway Papers,' and various other matters.

2066. No. 3. 1670–1700. Reports from Lord Henry Howard, Admirals Warren and Aylmer, Captains Delaval and Munden.

2067. No. 4. 1701–1711. Reports from Captain Delaval, Mr. Jones, Mr. Nash, Mr. Paul Methuen, &c.; also correspondence regarding the redemption of captives, the negotiation of treaties, and especially of the Mission of Mr. P. Methuen to the Sultan, and of the embassy sent by the latter to London.

2068. No. 5. 1712–1722. Captain Paddon and Consul Hatfield.

The former gives an account of his Mission to Morocco and of the liberation of captives between 1712 and 1716.

Consul Hatfield sends reports on the latter subject.

2069. No. 6. 1723–1733. Consuls Hatfield and Russel, Mr. Sollicoffre, &c.; correspondence principally from Tetuan, regarding captives, prizes, &c.

2070. No. 7. 1734–1749. Mr. Sollicoffre, Mr. Baron, Mr. Petticrew, Consul Latton.

Contains an account of the Mission of Mr. Leonard Sollicoffre from Tetuan to Morocco. He died at the former place in July 1735. He was succeeded in the Mission by Consul William Latton, who, with his staff, was imprisoned by the Sultan for about a year. It also contains petitions from captives.

2071. No. 8. 1750–1755. Consuls Latton and Petticrew. Negotiations carried on by Consul William Petticrew for the conclusion of a treaty with the Sultan. The Danish Mission and consular correspondence from Tetuan.

2072. No. 9. 1756–1772. Consuls Petticrew, Whatley, Read and Popham. Correspondence regarding the Mission of Captain Hyde Parker, R.N., of H.M.S. *Squirrel*. The death of Mr. Petticrew. The appointment of Mr. Whatley as Acting Consul. He did not join his post. Mr. James Read was appointed in his stead, and sent on a Mission to Fez, where he committed suicide on the 17th Feb., 1758.

2073. No. 10. 1761–1769. Consul J. Sampson.

This volume contains the appointment of Joseph Popham, in August 1761, as Consul-General, residing at Tetuan. Notices of Captain Cleveland's Missions. Embassies sent by the Sultan to England. A précis of events in Morocco since the accession of the reigning Sultan in 1754, and the expenses incurred during the Missions of Captain Parker, Consul Read, Captains Milbank and Cleveland, aggregating £78,853. Consul Popham was removed on account of the Sultan's "declared aversion" to him and received a pension of £200 a year.

2074. No. 11. 1770–1772. Consul J. Sampson.

He was appointed Consul-General in March 1770. He had been for a few weeks Consul-General in Algiers in 1767. He remained at Gibraltar till September, when he went to Tetuan. In January 1772 he fled to Gibraltar "without having brought any other than some old cloathes on my back." The Sultan tried to starve him to death. He was recalled to England in disgrace, but recommended for an appointment elsewhere.

2075. No. 12. 1772–1775. Consul Charles Logie.

He was appointed Consul-General 27th May, 1772. He went to Gibraltar, made a short visit to Mogador, returned to Gibraltar till December 1774, when he went to reside at Tangier.

2076. No. 13. 1776–1783. Consul Charles Logie.

In January 1781, Logie and all British Subjects were banished from Morocco. He gives a detailed narrative of the event, supported by testimony; makes a protest before the Judicial Authorities at Gibraltar, and subjoins an estimate of his losses amounting to £2,965. His salary was £400 a year. He became Consul-General at Algiers in 1785.

2077. No. 14. 1783–1785. Sir Roger Curtis.

This volume contains an account of the Mission of Captain Sir Roger Curtis, of H.M.S. *Brilliant* to Morocco. He arrived at Tangier on the 15th April, 1783, visited the Sultan at Salli, and concluded "Additional articles of friendship and commerce." He subjoins a note given to him by the Sultan, "of the favours which he required from the king."

2078. No. 15. 1784–1786. Consuls George Payne, Charles Adam Duff and James Duff.

George Payne was appointed on the 28th April, 1784. He went to Mogador with presents in May 1785, and subsequently to Tangier. He was recalled for neglect of duty in August of the same year, and left, putting Charles A. Duff, the Pro-Consul, into the acting office. The latter visited the Sultan at Morocco in May 1786.

2079. No. 15A. 1785. Entry Book. Letters written by Charles A. Duff between 29 Sept. 1785 and 30 July 1786.

2080. No. 16. 1787–1788. Consul James Matra.

James Mario Matra was appointed 10th March, 1787. Arrived at Tangier on the 6th May, and visited the Sultan at Morocco. He gives a long and interesting account of his Mission. His despatches are full of interest.

2081. No. 17. 1789–1790. Consul Matra, continued.

Voluminous despatches regarding current events in Morocco. The reception of European Consuls by the Sultan at Tetuan. The death of the Sultan Mohammed bin Abdulla bin Ismail and the accession of his son Mahmud El-Yazid. Matra is appointed Ambassador to congratulate the new Sultan.

2082. No. 18. 1772–1792. Miscellaneous papers connected with the Consuls before mentioned.

2083. No. 19. 1791–1794. Consul Matra, continued.

Miscellaneous despatches. Building of the Consulate at Tangier. Visit of Matra to the Sultan at Larache, when he concluded a treaty of friendship and commerce with him. This was ratified at Sallee, 8th April, 1791.

2084. No. 20. 1795–1801. Consul Matra, continued.

An interesting account is given of the plague in Barbary, and the fearful mortality all over Morocco.

2085. No. 21. 1802–1808. Consul J. Matra. Pro-Consul John Ross. Consul James Green.

On the 14th March, 1806, James Green was appointed Consul-General, owing to Mr. Matra's failing health. The latter died at Tangier on the 29th March. Mr. John Ross was sent by the Governor of Gibraltar to act as Pro-Consul. Green arrived in July, and immediately visited the Sultan at Fez. His journey cost 3,251 dollars.

2086. No. 22. 1799. Miscellaneous papers. Sundry letters and petitions to H.M. Secretary of State. Extracts from the Registry of Vice-Admiralty Court at Gibraltar, regarding prizes.

2087. No. 23. 1809–1811. Consul-General James Green. Miscellaneous despatches.

2088. No. 24 1812–1814. Miscellaneous subjects and correspondence regarding the Naval forces in the Mediterranean.

2089. No. 25. 1816. Consul J. Green. Consul Green returns to England and submits his case for pension.

2090. No 26. 1817. Consul J. Green. He is granted a pension of £500 a year.

2091. No. 27. 1818. Consul Douglas. Mr. James Sholto Douglas is appointed Consul-General. His correspondence in England and Gibraltar.

2092. No. 28. 1819. Consul Douglas and Vice-Cons. Js. A. Bensur. Correspondence of no particular interest, mostly from England.

2093. No. 29. 1820. Consul S. Douglas. Correspondence from Florence and Gibraltar, of no interest.

2094. No. 30. 1821. Consul S. Douglas.

Consul Douglas had reached Gibraltar on the 1st June, 1818, on his way to Tangier, but owing to the plague he could not communicate with Morocco, and only arrived at Tangier on the 4th April, 1821.

2095. No. 32. 1823. Consul S. Douglas.

This volume contains some interesting letters from and regarding Belzoni, the celebrated Egyptian excavator. He resolved on a journey to Timbuktu and after a residence in strict seclusion at Gibraltar, for the purpose of letting his beard grow, he proceeded to Morocco, and actually reached Fez, but the Sultan would not permit him to proceed further, and he returned to Tangier. He then went to Benin, and died of dysentery at Gato on the 3rd December, 1823. These autograph letters therefore are amongst the last he ever wrote. One of the letters in this volume is a representation from John Murray, the publisher, regarding him.

2096. No. 33. 1824. Consul S. Douglas.

This contains an account of his mission to the Sultan at Fez, for the purpose of concluding a treaty on account of Great Britain and Sardinia.

2097. No. 33A. 1783–1823. Original treaties.

These are not original, but copies entered into a volume, of the following.

No. 1. "The Additional Articles" negotiated by Sir Roger Curtis on the 24th May, 1783.

No. 2. The treaty concluded between Consul Matra and the Sultan, of 49 Articles, ratified on the 8th April, 1791.

No. 3. Another treaty of 41 Articles negotiated by Matra on the 14th June, 1801. This was signed by the Sultan, but not by Matra.

No. 4. Treaty of 8 Articles negotiated by James Sholto Douglas on the 19th January, 1824.

No. 5. Treaty of 25 Articles between the Sultan and Carlo Felice, King of Sardinia; letters from both contracting parties and despatches bearing on them.

2098. No. 33B. 1801. Original treaty. 1837–38. Reports on treaty of 1801.

A printed document giving in parallel columns the version as contained in Hertslet's Collection, and a translation from the Arabic by Mr. Salamé in 1838. Also a copy of the original Arabic, collated by John H. Drummond-Hay, Acting Vice-Consul, and a report on it by Cons.-Gen. Drummond-Hay.

2099. No. 34. 1825. Consul S. Douglas. Miscellaneous correspondence. Opening of the port of Sta. Cruz by the Sultan.

2100. No. 35. 1826. Consul S. Douglas, Vice-Cons. C. Ellis and W. Price.

Contains a beautifully written "Arabic copy of the treaty with this Empire for the Earl Bathurst"—vessels plundered by Arabs—an account of Mogador by Joseph Dupuis.

2101. No. 36. 1827. Consul S. Douglas, Vice-Cons. C. Ellis, R. Chaillet and miscellaneous correspondence, chiefly during the absence on leave of S. Douglas.

2102. No. 37. 1828. Consul S. Douglas, Vice-Cons. C. Ellis, R. Chaillet, William Wiltshire, and miscellaneous, 1.

A serious misunderstanding takes place between the Consul and Commanders Hope and Edwards, R.N. Tangier is blockaded, the Consul strikes his flag, and is detained on shore by the Moorish Government. A code of instructions is forwarded "to Consuls abroad in all matters under the cognisance and control of the Navy Board." There is some correspondence regarding the death of Major Laing.

2103. No. 38. 1828. Difference with Emperor, blockade of Tangier, Consul S. Douglas, Sir George Don, Admiralty, &c.

Contains a correspondence with the Sultan regarding the capture of British vessels. The Consul's explanation regarding his misunderstanding with Commander Hope. Tangier blockaded. Pestilence and famine at Tangier. Opinion of the King's Advocate regarding the misunderstanding between H.M. Government and the Sultan, a précis of correspondence on the same subject.

2104. No. 39. 1829. Consuls S. Douglas and Edward William Auriol Drummond-Hay, Vice-Cons. R. Chaillet, C. Ellis and miscellaneous.

Précis of correspondence regarding the détention of two British vessels by Moorish cruisers. Consul Douglas reviews the circumstances connected with the blockade of Tangier, and regrets "the little attention paid to my opinion." He states that the blockade was entirely owing to Capt. Hope. The latter gives his version of the affair, but His Majesty expresses disapprobation of his conduct.

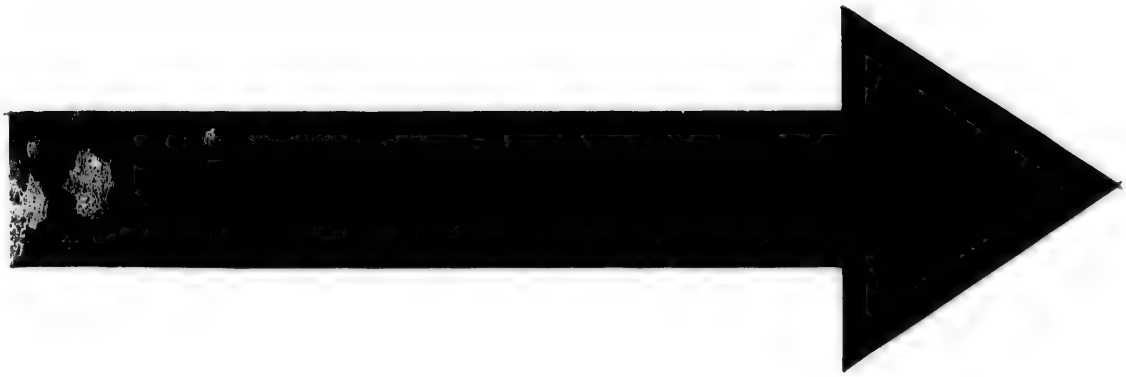
The flag is re-hoisted on the 19th January, "everything appears to be amicably settled." Diaries are sent from all the Consulates. Morocco and Austria are at war. Consul Douglas resigns his office on a pension of £500 a year, on account of cataract. Cons.-Gen. Drummond-Hay is appointed to succeed him and arrives on the 29th August. He pays a visit to the Sultan at Morocco.

2105. No. 40. 1830. Jan. to Aug. Cons.-Gen. Drummond-Hay, 1.

Précis of correspondence regarding vessels wrecked and plundered on the coast. Consular Diaries. Commercial reports. A review of extracts from M. Jomard's Geographical Researches and remarks on M. Caillié's voyage to Central Africa, by Mr. Briarly, formerly Director of the Hydrographical Department under the Spanish Government at Madrid. Unfounded charge against the Consulate of Tangier, of throwing obstacles in the way of provisioning the French armament before Algiers. Correspondence regarding Hasuna D'Gheis.

2106. No. 41. 1830. September to December. Consul Drummond-Hay, Vice-Cons. C. Ellis, W. Price, and miscellaneous, 2. Mr. Schousboe appointed Danish Cons.-Gen. at Tangier. Mr. Drummond-Hay permitted to make treaties for the Hanse-towns. Sir Sidney Smith's Autograph Memorandum on "Diplomatic relations with North Africa." Lieut. Washington's survey of the coast.

2107. No. 42. 1831. Jan. to June. Cons.-Gen. Drummond-Hay. Lieut. Washington's survey of the coast. Consular Diaries, 1. V.-C. Wiltshire criticises M. Jomard's "Journal d'un Voyage à Temboctou, &c., par René Caillet." Invasion of Locusts. Mr. Drummond-Hay criticises Sir Sidney Smith's report on diplomatic relations.



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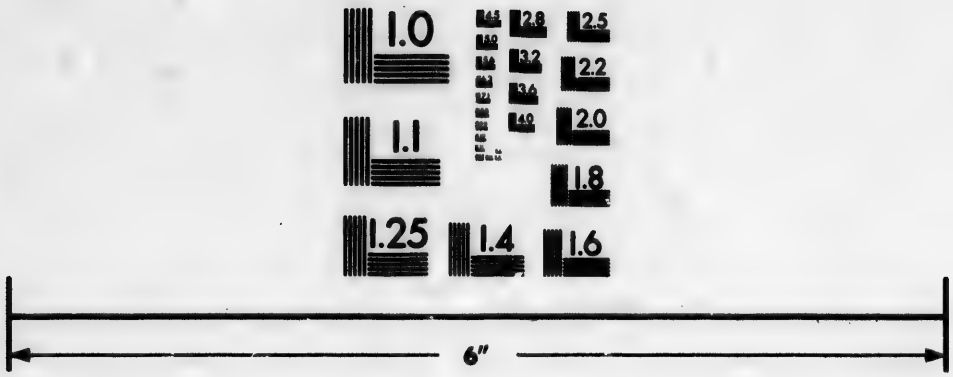

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2108. No. 43. 1831. July to December. Cons.-Gen. Drummond-Hay, Vice-Cons. W. Ellis, R. Chaillet, and miscellaneous, 2.

Correspondence with Sir H. Hotham on the state of affairs. Consular Diaries. Four ostriches sent by Sultan to King. Liberation of captives by Ironmongers' Company.

2109. No. 44. 1832. Cons.-Gen. Drummond-Hay and miscellaneous. Consular Diaries. Comte de Mornay's embassy to the Sultan at Mekenes. Provisions for Gibraltar. Assistance to Zoological Society.

2110. No. 45. 1833. Cons.-Gen. Drummond-Hay and miscellaneous. Consular Diaries. Supplies to Gibraltar. Imprisonment of Mr. Can, Consul U.S.A.

2110a. No. 46. 1834. Cons.-Gen. Drummond-Hay and miscellaneous. Hanseatic affairs. Condition of Morocco. Trade Returns. Piracies on coast. Outbreak of cholera.

2111. No. 47. 1835. Cons.-Gen. Drummond-Hay. Trade Reports. Cholera. French survey of coast by Captain Le Saulnier de Vauhello. Survey of coast by H.M. ships. Slave trade. Report on mission and consular establishment. Mr. Davidson's travels in Morocco.

Then follows a series of five entry-books, containing fair copies of despatches from the Colonial Office, all carefully indexed. They have no P. R. O. numbers, but only bear the numbers given to them at the Foreign Office to which they were transferred. These of course form the complement to the preceding volumes.

2112. No. 1. Instructions to Consuls, from 10th January, 1825, to 3rd January, 1831.

2113. No. 2. Instructions to Consuls, from 2nd January, 1831, to 31st March, 1836.

2114. No. 3. Domestic. Answers to letters. There are despatches addressed to officials and private persons in England, on subjects connected with Morocco, from 24th February, 1825, to 25th July, 1834.

2115. No. 4. Domestic. Answers to letters, from 28th July, 1834, to 10th May, 1836.

2116. No. 5. Official letter-book, British Consulate, Mogadore, from 3rd April, 1813, to 22nd July, 1826. No Index, mostly reports to the Consul-General at Tangier.

In 1836 the control of the Barbary Consulates was transferred from the Colonial to the Foreign Office. A new series begins, having no P. R. O. numbers.

2117. No. 1. To and from Consul-General at Tangier, Mr. Drummond-Hay. Diplomatic and Consular. January to June, 1836.

Transfer to Foreign Office. French war with Abd-el-Kadir. The Ameer writes to William IV. for assistance. The Government, U.S.A., contemplates occupying an island on the coast near the Straits of Gibraltar as a strategic position. Mr. Hodgson sent from America to negotiate.

2118. No. 2. To and from Consul-General at Tangier. Mr. Drummond-Hay. Diplomatic and Consular. July to December, 1836.

The most interesting papers are regarding the travels of Mr. Davidson and his proposal to open out a port for English commerce at Wad Draa.

2119. No. 3. Vice-Consuls at Tangier and Mogadore, Bell and Wiltshire. Foreign and Domestic. Various. January to December, 1836.

Continuation of correspondence from Mr. John Davidson, dated from, and regarding the Wad Nun Scheme. He declares the country to be quite independent of the Sultan. Also the views of H.M. Government regarding it. Claim of Messrs. Bensusan & Co. regarding the *Ann Lucy* plundered at Mazagan in 1823. Design of the American Government for acquiring a position on the Coast of Morocco discussed between England and France. Importance of Ceuta to England.

2120. No. 4. Consul-General at Tangier, Mr. Drummond-Hay. Diplomatic. January to April, 1837.

Robbery and murder of Mr. Davidson on his way to Timbuctoo, on the 18th December, 1836. The Governor of Tangier allows the Consuls-General only to keep one horse each, and no one else is to mount them.

2121. No. 5. Consul-General at Tangier, Mr. Drummond-Hay. Diplomatic. May to December, 1837.

The British Government discontinues the custom of giving presents to the Governors of Tangier on appointment. Sir Grenville Temple's proposed visit to Morocco.

2122. No. 6. Consuls at Tangier and Mogadore, Mr. Drummond-Hay and Mr. Wiltshire. Domestic. January to December, 1837.

Vice-Cons. Bell sent to replace Mr. Dalzel at Oran. He was afterwards Consul-General at Algiers. Further correspondence regarding the murder of Mr. Davidson at El-Harib.

2123. No. 7. Cons.-Gen. Drummond-Hay and various. January to December, 1838. Nothing of special interest.

2124. No. 8. Case of Vice-Cons. Dalzel. 1836–1839. Voluminous correspondence of no public interest.

2125. No. 9. Diplomatic. Cons.-Gen. Drummond-Hay and various. January to December, 1839. Murder of Herico family at Tangier.

2126. No. 10. Consular. Cons.-Gen. Drummond-Hay and various.

2127. No. 11. Diplomatic. Cons.-Gen. Hay. January to December, 1840. Correspondence regarding the French project for creating an establishment at Wad Nun, and with Abd-el-Kader.

2128. No. 12. Consular. Cons.-Gen. Drummond-Hay, Vice-Cons. Dalzel, Mallory and various. January to December, 1840. Quarrel between French Consul at Mogadore and local authorities.

2129. No. 13. Cons.-Gen. Drummond-Hay. Diplomatic. January to December, 1840. M. Van Lace, Belgian Consul, negotiates a treaty. French affair at Mogadore.

2130. No. 14. Consuls at Tangier, Drummond-Hay, Murray and various. January to December, 1841.

2131. No. 15. Diplomatic. Cons.-Gen. Drummond-Hay and Vice-Cons. Murray Domestic, various. January to December, 1842. Visit of Cons.-Gen. to Sultan at Mekenez.

2132. No. 16. Consuls at Tangier, Tetuan and Mogadore, Hay, Murray, Wiltshire. Consular, domestic. January to December, 1842. Nothing of special interest.

II.—British Occupation of Tangier.

There are a number of volumes belonging to the Colonial Office connected with the British occupation of Tangier.

2133. No. 1. 1661–1662. Miscellaneous papers. Governor, the Earl of Peterborough.

This contains the "Establishment of the Forces raised the 10th October, 1661, for His Matie's Service, in the Kingdom of Morocco, Suz and Fez, under command of His Excellency the Earle of Peterburgh, and Staff Officers of His Excellency's owne Regiment of Foote." Commissions, warranty accounts and "Lawes and Ordinances of War for the better government of His Majesties forces."

2134. No. 2. 1663. Governor, the Earl of Peterborough. Warrants for levying troops. Revocation of Commission to the Earl of Peterborough. Appointment of and instructions to "The Earl of Teveott." Reports from Tangier and from the Consul at Cadiz. Royal Warrant for making Tangier a free port, and articles of agreement for building the mole.

2135. No. 3. 1664. Governor, the Earl of Teviot; Lieut.-Gov. Col. John Fitzgerald.

Memorandum regarding the fortifications, pay of troops. Appointment of Col. John Fitzgerald as Lieutenant-Governor. Death of the Earl of Teviot. The Earl of Peterborough offers to return to Tangier "if the little knowledge I have of that place could be usefull to the King in this time of Consternation." Poetical panegyric on Lord Teviot:—

"I'll only tell what Teveot here hath done,
What battles fought, and what great honours won;
Not tiring modesty with praising charms,
I'll sing his praise in very modest terms."

2136. No. 4. 1665. Lieut.-Gov. Col. John Fitzgerald.

Despatches from Col. Fitzgerald. Lord Belasyse arrives as new Governor, 8th April. His despatches and reports to the Commission for Tangier. Correspondence with "Gayland," called on his seal

سيد عبد الله ابن احمد ابن علي غيلان Seid Abdulla ibn Ahmed ibn Ali Ghailan.

2137. No. 5. 1665. Law Papers.

2138. No. 6. 1666. Governor, John Lord Belasyse; Lieut.-Gov. Col. John Fitzgerald, Lieut.-Gov. Col. John Norwood.

Col. Fitzgerald recalled; Col. Norwood's Commission as his successor. Correspondence with Ghailan in Spanish. Garrison "againe engaged in warre with Taffilett, who has reduced our friend Gayland to the utmost point." Law papers.

2139. No. 7. 1666. Law papers.

2140. No. 8. 1667. Lieut.-Gov. Henry Norwood. Correspondence regarding the political condition of the country, especially the misfortunes of Ghailan, who corresponds in Spanish from Arzilla. Proposals made by Sir Hugh Cholmeley. Legal papers.

2141. No. 9. 1667. Law papers.

2142. No. 10. 1668. Lieut.-Gov. Henry Norwood.

Establishment of Civil Government. Establishment of garrison. Troops drawn from Portugal. Lord Sandwich visits Tangier. "Revolution in Barbary

from North to South sae violent and all in favor of the King Taffaletta." Legal documents, claims of the Government of Algiers.

2143. No. 11. Law papers.

2144. No. 12. 1669. Lieut.-Gov. Henry Norwood. Governor, John Earl of Middleton.

Order in Council "establishing a new method of building the mole." Instructions for the Corporation. Embassy of Lord Howard; "My Lord arrived safely (though sickly)" at Tangier on the 11th August. Many law papers. Frequent attacks by the Moors.

2145. No. 13. 1670. Government of John Earl of Middleton. Chiefly law papers.

2146. No. 14. 1671. Government of John Earl of Middleton. Reports on the state of Tangier and of the interior. Many law papers.

2147. No. 15. 1668–1671. Register of the Court of Record and Session established by Charter at Tangier in Africa, commencing September 1st, 1668, and ending November 22nd, 1671.

2148. No. 16. 1672. Governor, John Earl of Middleton. Sir Hugh Cholmeley's order for carrying on the mole during his absence in England. Lord Middleton's reports to the Lords Commissioners for Tangier. Legal documents.

2149. No. 17. 1671–1672. Testamentary papers.

2150. No. 18. 1665–1672. Notary public's proceedings from 1665 to 1672.

2151. No. 19. 1673–1674. Governor John Earl of Middleton. Reports to King and Lords Commissioners. Progress of mole. Treaties with Ghailan. Legal documents.

2152. No. 20. 1668–1675. The Register of the Proceeding of the Corporation of Tangier from the first settlement, August 21st, 1683, to August 20th, 1675.

2153. No. 20A. 1675. Law papers.

2154. No. 21. 1676. January to June. Governor, Earl of Inchiquin. [Surnamed in Ireland "Murrough of the burnings." Before his appointment he and his son Lord Obrien had been captives in Algiers.]

Sir Palmer Fairborne's and Col. Roger Allsopp's Commission as Deputy-Governors of Tangier during the Earl of Inchiquin's absence in England. His justification of himself from a charge of misconduct. Sir Hugh Cholmeley's representation regarding the mole. Legal documents.

2155. No. 22. 1676. July to December. Governor the Earl of Inchiquin, and Miscellaneous.

Abstract of the state of the city and garrison. Peace concluded with the Sultan. Progress of the mole and "chest-work" on it. [The first instance of blocks of concrete having been used in marine engineering.] Legal documents.

2156. No. 23. 1677. January to June. Miscellaneous papers.

2157. No. 24. 1677. July to December. Miscellaneous papers.

2158. No. 25. 1664–1667. An account of houses leased out at Tangier.

2159. No. 26. 1678. January to May. Miscellaneous papers.

2160. No. 27. 1678. June to December. Governor Earl of Inchiquin, and Miscellaneous papers.

2161. No. 28. 1679. Miscellaneous papers.

2162. No. 29. 1680. January to July. Miscellaneous papers.

2163. No. 30. 1680. August to December. Miscellaneous papers.

2164. No. 31. 1675–1680. Register of the proceedings of the Court of Record of Tangier.

2165. No. 32. 1681. January to May. Miscellaneous papers.

2166. No. 33. 1681. June to December. Miscellaneous papers.

2167. No. 34. 1677–1681. Register of the Court Merchant.

2168. No. 35. 1682. January to July. Miscellaneous papers.

2169. No. 36. 1682. August to December. Governor Col. Richard Kirke.

Correspondence regarding a proposed treaty; sending an Ambassador to the Sultan from England. Redemption of captives. A document entitled "The true state of Tangier, or Tangier improvable." Col. Kirke (?) "Begs Y^r M^ties License to print the aforesaid to show how considerable Tangier may be made."

2170. No. 37. 1673–1682. Notarial register.

2171. No. 38. 1668–1682. The Register of his Majestie's Court Merchant established by Charter at Tangier, the 3rd day of September, 1668.

2172. No. 39. 1683. January to June. Governor Col. Richard Kirke.

Mission of Lieut. Nicholson going with his Majesties letters to the Emperor of Morocco. 23rd January, 168¾. Mr. Onby accompanied him on "account of his knowledge of the language." The Sultan refused to sign the "Whitehall Treaty."

2173. No. 41. 1682–1683. Tangier. The minute-book of what orders had been made and passed in the Court Merchant since 168½ as alsoe what recognizances have been taken from that yeare.

2174. No. 42. 1668–1683. Tangier. Freeman's Book.

2175. No. 43. 1675–1683. Minute-book of proceedings at General Hales before Mayor, Aldermen and Common Council of Tangier.

2176. No. 44. 1671–1683. Minute-book of Courts of Record and Courts of Session, 1671–1675. Register of Warrants entered in the Court of Record, 1671–1683.

2177. No. 45. 1679–1683. The Register of the Court Merchant in Tangier.

2178. No. 46. 1680–1683. Minute-book of Court of Record.

2179. No. 47. 1675–1686. Proceedings of Court of Quarter Sessions.

2180. No. 48. 1668–1735. Miscellaneous correspondence.

A MS. description of Tangier. "Sittuacon, soyle, climate, condicon of ye citty, buildings, inhabitants, government, fortificacons, forces, artillery and amunicon, provisions, port, mould, trade, improvement from within, improvement of trade from abroad, neighbour iu Africk, neighbours in Europe." Copy of the Commission to the Earl of Peterborough as Governor of Tangier. Instructions for the Earl of Teveot. Establishment of two regiments of foot and one of horse for the garrison of Tangier, January 1667. The King's commission to Col. Henry Norwood to be Lieutenant-Governor of Tangier, 21st February, 1666. Patent for creating Corporation of Tangier, 20th April, 1668. Petition of Sir Hugh Cholmeley, surviving undertaker for building the mole. List of slaves (79) belonging to his Maties Bagnia at Tangier, 20th February, 1676. List of slaves redeemed, 1684. Correspondence with

and of Lord Dartmouth. Survey of the mines "for the blowing up, dismantling, and totall destruction of the fortifications, forts, walls, defences, &c., of and appertaining to this place," dated 20th January, 1683.

III.—Audit Office Declared Accounts.*

2181. Bundle 161, Roll 435. Army (Military Governors). Earl of Peterborough Governor of the garrison of Tangiers, 10th October 1661, to 4th November, 1662.

2182. „ „ „ 436. Ditto. 4th November, 1662, to 4th May, 1663.

2183. „ „ „ 437. Ditto. E. Sackville, 28th October, 1680, to 1st Jan. 1682.

2184. „ „ „ 438. Ditto. P. Kirke, 1st January, 1682, to 10th January, 1684.

2185. „ „ „ 439. Ditto. Ditto, ditto. (Duplicate.)

2186. „ 309, „ 1217. Army (Paymasters, &c.). Sir R. Harley, Paymaster of the troops at Tangier, 1662.

2187. „ „ „ 1218. Ditto. T. Povey, Receiver-General and Treasurer for Tangiers, 4th November, 1662, to 20th March, 1664.

2188. „ „ „ „ Ditto. Ditto, ditto. (Duplicate.)

2189. „ 310, „ 1220. Ditto. S. Pepys. Ditto. (No Date.)

2190. „ „ „ 1221. Ditto. Ditto, ditto. 30th December, 1667, to 31s December, 1671.

2191. „ „ „ 1222. Ditto. Ditto, ditto. 31st December, 1671, to 30th December, 1674.

2192. „ „ „ 1223. Ditto. Ditto, ditto. (No date.)

2193. „ „ „ 1224. Ditto. Ditto, ditto. 31st December, 1674, to 31st December, 1677.

2194. „ „ „ 1225. Ditto. Ditto, ditto. 1st Jan., 1678, to 30th April, 1680.

2195. „ „ „ 1226. Ditto. W. Hewer. Ditto. 30th April, 1680, to 30th June, 1681.

2196. „ „ „ 1227. Ditto. Ditto, ditto. 30th June, 1681, to 25th March, 1684.

2197. „ 182, „ 552. Army (Contractors, &c.). Sir D. Ganden and others. Victuals for the garrison of Tangier, 1st October, 1677, to 30th September, 1678.

2198. „ „ „ 553. Ditto. Ditto, ditto. (Duplicate.)

2199. „ „ „ 554. Ditto. A. Sturt. Ditto. 29th September, 1678, to 5th February, 1684.

2200. „ 578, „ 504. Commissariat (abroad). Sir R. Harley. Clothes for the troops sent to Tangiers, 1661.

2201. „ 2521, „ 616. (Works and fortifications.) Sir H. Cholmeley, con-

* Parallel information is to be found in the Pipe Office Declared Accounts.

tractor for the Mole at Tangier, 25th Mar., 1663, to 30th June, 1666.

2202. Bundle 2251, Roll 617. Ditto. Ditto, ditto. (Duplicate.)

IV.—War Office (Ordnance) Records—Debenture Books.

2203. 1670–84. Tangier.

2204. 1677, Feb. 6. Ditto.

2205. 1678–1687. Ditto.

2206. 1674–1680. The Book of Tangier.

V.—Calendars of State Papers.

There are many interesting documents connected with Morocco in other series of State papers preserved in the Public Record Office. These are hardly accessible to the student, with the exception of such as are noted in the various Calendars published under the direction of the Master of the Rolls. The following are some of the most important :—

Domestic Series.

2207. Vol. 1581–1590. Martyrdom of Peter Elenis, 85.

2208. Vol. 1591–1594. Captivity of Louisa Tunes, 395.

2209. Vol. 1598–1601. Political state of Morocco, 461.

2210. Vol. 1625–1626. Ambassadors from Morocco, 529. Slaves at Sallee, 54, 79, 167, 2..3, 241, 343, 414, 516. Man-of-war captured by five Englishmen, 257, 260, 268, 339, 381, 405, 427. Sallee pirates on the Coast of England; numerous entries from p. 10 to 341. Petition from the wives of 2000 captives at Sallee, 516.

2211. Vol. 1627–1628. Loss of £26,000, caused by pirates of Sallee, 146. Forty-three captives released from Sallee, 205. Ambassador for Sallee, 367.

2212. Vol. 1628–1629. Proclamation to H.M. subjects to treat people of Sallee and Tetuan kindly, 328, 356, 425.

2213. Vol. 1629–1631. Mission of Captain John Harrison to Morocco, 60, 94, 350. Capt. Harrison "finds himself neglected as never was poor gentleman after being seven times employed as agent in Barbary, settling the peace and redeeming captives," 508.

2214. Vol. 1631–1633. Mission of Capt. Harrison, 46, 219.

2215. Vol. 1633–1634. Lodowick, son of Sir John Bowyer, six years in captivity at Sallee, 215.

2216. Vol. 1634–1635. In Morocco the spoils of our people are their greatest wealth, 69.

2217. Vol. 1635. Barbary Merchants must trade only to certain ports in Morocco, 533. Petition of relatives of captives in Morocco, 476. Authorities of Sallee imprison all English in the town, 608.

2218. Vol. 1635–1636. Captain Edmund Bradshaw sent to Morocco for the redemption of captives, 288. Petitions of 1000 poor women whose husbands are "in woeful slavery and grievous torments in Morocco," 15. Sallee men-of-war frequent the English Coast, 303.

2219. Vol. 1636–1637. Expedition against the pirates of Sallee, 18, 173, 228, 362, 195, 253, 237, 367, 484, 498. Captives in Sallee, 72, 86, 140, 141, 311, 440, 472. Captain Rainsborough appointed Admiral of the fleet employed against Sallee, 212, 237, 239, 251, 363, 430, 431, 458, 508. His instructions, 449. His recommendations, 367.

2220. Vol. 1637. Capt. Rainsborough's Mission to Morocco, 430, and many other entries. Presents for H.M. embarked at Saffi, 431. Petition of Capt. Bradshaw regarding his Mission to Morocco, 523. Captives, 430, 431, 475. An English Resident for Sallee, 577.

2221. Vol. 1637–1638. Ambassador from Morocco, 20, 294, 321, 356. Capt. Bradshaw accused of witchcraft, 20. He is committed to the Fleet, 206. Giles Penn, H.M. Consul at Sallee, 42, 116, 468. Late expedition against Sallee, 82, 86, 116.

2222. Vol. 1638–1639. Petition of Capt. Bradshaw from the Fleet, 276. Robert Blake appointed agent in England for the Sultan of Morocco, 69, 329, 356, 363, 380, 501.

2223. Vol. 1639–1640. Order in Council directing all ships trading to Morocco to go first to Saffi, 379. Contract for saltpetre, 513.

2224. Vol. 1651–1652. Widow of Edm. Bradshaw petitions Committee of Foreign Affairs to write in her behalf to the Emperor of Morocco, 228, 235.

2225. Vol. 1652–1653. Robert Downe offers to free thirty-two English men and boys in misery and bondage at Sally for £1000, 339, 342.

2226. Vol. 1656–1657. Thomas Warren sent to Morocco to liberate captives, 1. Proposal to establish Consulate at Tetuan, 274.

2227. Vol. 1661–1662. Numerous entries connected with the British occupation of Tangier, and regarding Samuel Pepys, Treasurer for that place.

2228. Vol. 1663–1664. Many entries regarding the British occupation of Tangier under Lord Tiveot. Regicides sent to Tangier, 536. Death of Lord Tiveot, 610–619, 622, 674.

2229. Vol. 1664–1665. Many entries regarding Tangier. Lord John Belasyse appointed Governor, 239, 248, 257, 260, 266, 308.

2230. Vol. 1665–1666. Many entries concerning Tangier.

2231. Vol. 1666–1667. Numerous entries concerning Tangier.

2232. Vol. 1667. Correspondence regarding Tangier.

Venetian Series.

2233. Vol. 1202 to 1509. Pietro de Monte Molin, consecrated Bishop of Morocco at Oxford, 1487, p. 169.

Foreign Series.

2234. Vol. 1564–1565. Enterprise of Peñon de Velez, 194, 216.

2235. Vol. 1575–1577. The King of Morocco sends a letter to the Queen, p. 468. Report of Edmund Hogan to the Queen regarding his Mission to Morocco in 1577, p. 598. A very interesting document. See also Nos. 72, 73, 105.

Treasury Papers.

2236. Vol. 1697–1701–2. Captain Delaval's Mission for the redemption of captives, p. 507–508. Other entries under the heads of Morocco and Tangier.

2237. Vol. 1702–1707. Pension to family of Sir Palmer Fairborne, died of wounds when governor of Tangier, p. 185. Other entries regarding Tangier and Morocco.

2238. Vol. 1708–1714. Present of spotted deer sent by H.M. to Sultan, p. 262, &c. Many other entries regarding Morocco and Tangier.

2239. Vol. 1714–1719. Captain Paddon's Mission to Morocco, 25, 117, 132. Capt. Norbury's Mission, 365. Amongst other presents Capt. Paddon took "a rich crimson velvet sedan or chair for the darling Sultaness, a native of England, £50, and 10 lbs. of the finest tea at 30s. per pound," 142. Many other entries regarding Morocco, Sallee and Tangier.

2240. Vol. 1720–1728. "The exact form and method that all Ministers have ever gone on an Embassy to the Emperor of Morocco, from George Delaval in 1707 to Charles Stewart in 1722," p. 176. Captain Stewart's Mission, 62. Numerous entries regarding Morocco, Tangier and Tetuan.

Home Office Papers.

2241. Vol. 1760–1765. Report of Capt. Archibald Cleveland, giving particulars of his Mission to the Emperor of Morocco. Arrived at Mequenez, 10th Nov., 1761. Badly received by the Sultan, who at the audience of farewell informed him that every English subject found on one of his enemies' ships would be treated as a slave, 83.

2242. Vol. 1766–1769. Much correspondence regarding Morocco, Tangier, Tetuan, Sallee, &c.

2243. Vol. 1770–1772. Mr. Logie's Mission to Morocco, 626. Proposal to send a Consul to Morocco, 9. Regarding Consuls at, 52, 171, 397, 517, 591, 593, 626. Sultan orders British Consul to leave Tangier, 26. Presents for Sultan, 9, 39, 140–166, 622–626. Liberation of captives by Ironmongers' Company, 527, 632. Sultan proposes to repair mole at Tangier, 470.

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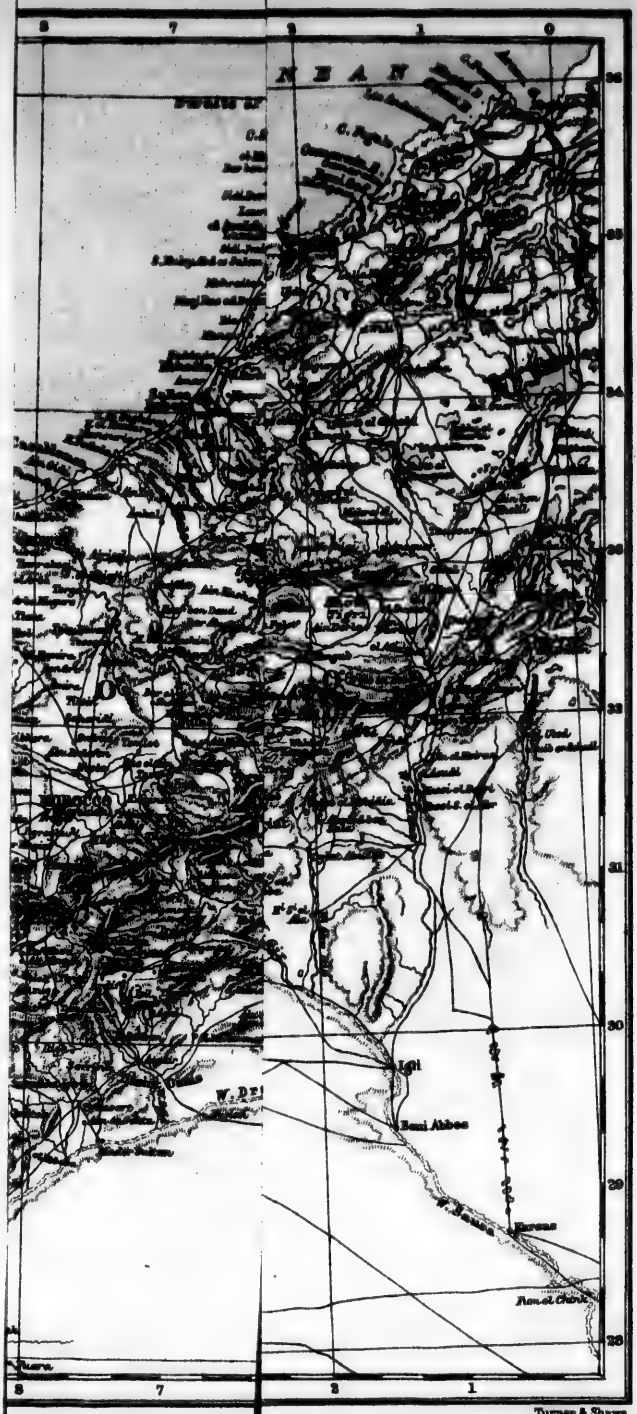
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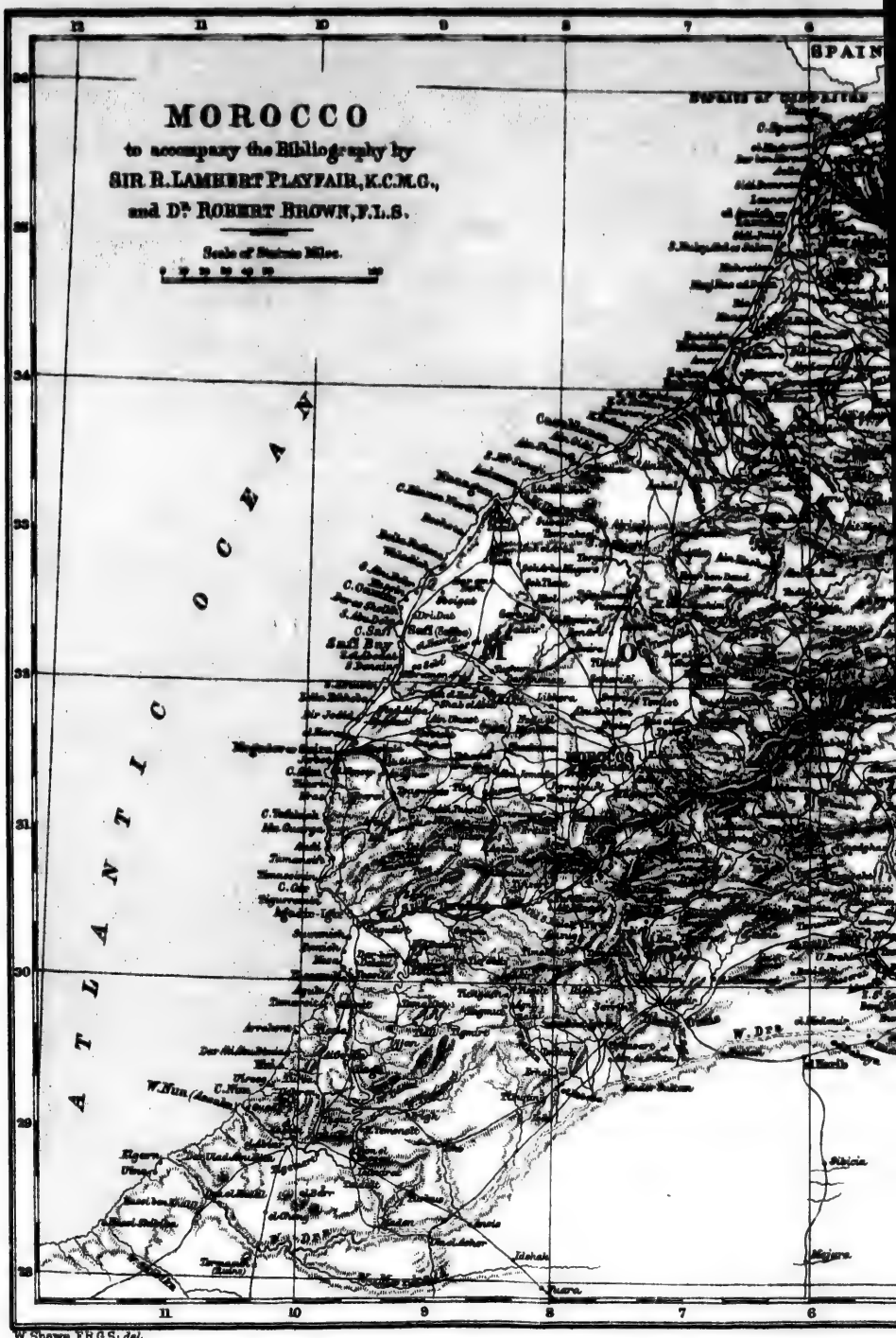

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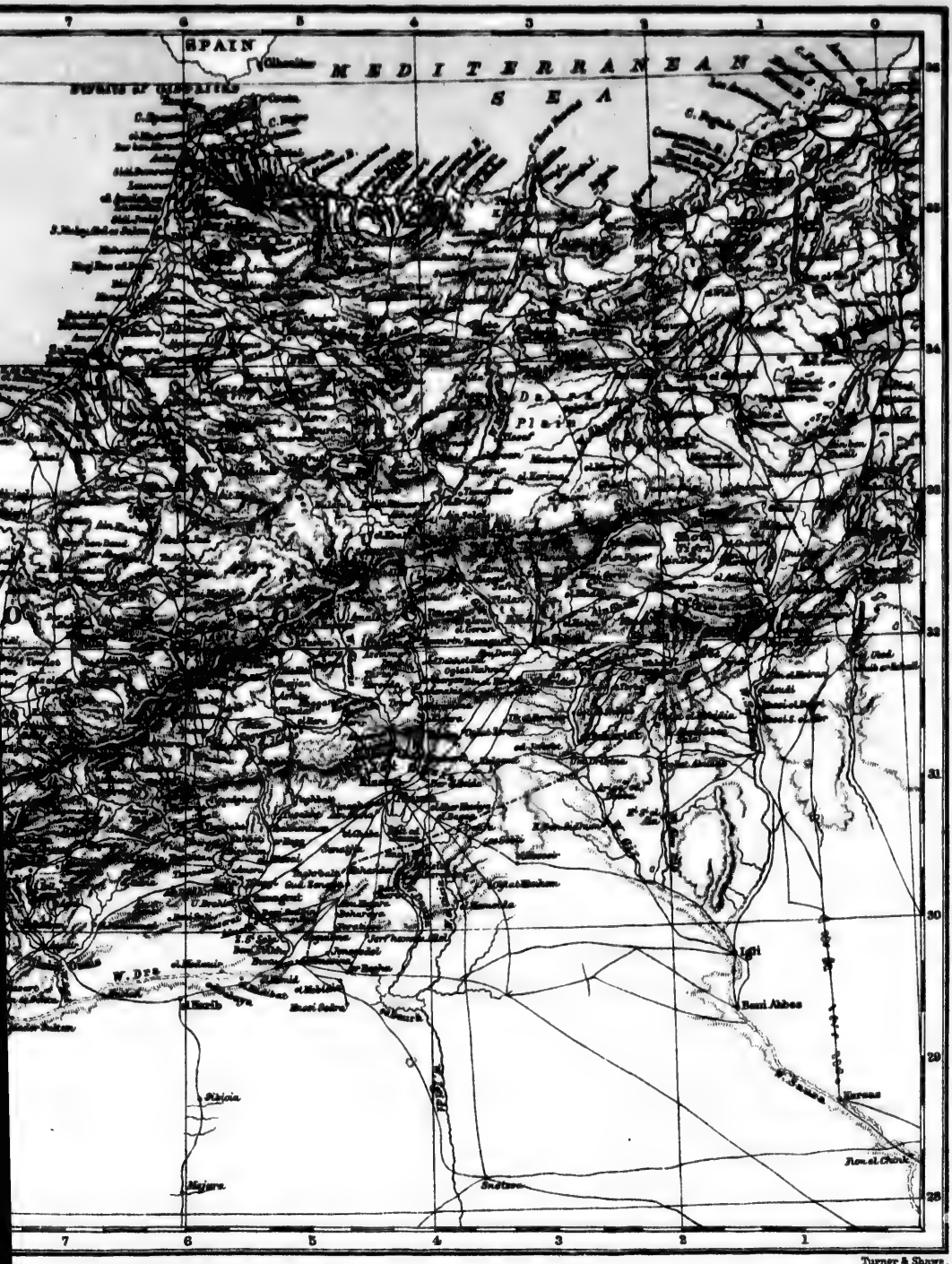
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* More correctly applied to the village at the N.E. foot of Apes' Hill.

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* The town of Mogador is called by the Arabs Es-Suair, الصويرة; the word Mogador, مگدور, is only applied to a saint's house near the town.

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PART IV.

NOTES

ON A

JOURNEY IN NORTH-EAST YEZO

AND

ACROSS THE ISLAND.

BY

JOHN MILNE, F.R.S., F.G.S.,
Professor of Mining and Geology in the Imperial University of Japan, Tokio.

WITH MAPS.

NOTES ON A
JOURNEY IN NORTH-EAST YEZO
AND
ACROSS THE ISLAND.*

By JOHN MILNE, F.R.S., F.G.S., Professor of Mining and Geology in the Imperial University of Japan, Tokio.

Maps, p. 516.

THE following notes on a journey in North-East Yezo and across the island refer to a portion of Japan which has not yet been described. In 1874, Mr. B. S. Lyman, with a party of twenty-six Ainu, crossed the island from the neighbourhood of Kamikawa towards the south-east, reaching the Pacific coast at the mouth of the Tokachi. In consequence of provisions falling short, and not meeting the relief party sent from the east coast, the expedition suffered considerable privations. The track taken by Mr. John Revilliod and myself was from Yubets, on the north coast, southwards to Kamikawa, or nearly at right angles to the route taken by Mr. Lyman. Since Mr. Lyman's expedition one or two Japanese have crossed the island, and Ainu during the winter penetrate the forests for hunting purposes. As the interior is for the most part a trackless forest, it is doubtful if any two parties could as yet do more than follow the same general direction.

Capt. T. W. Blakiston has published, in the old *Journal* (Vol. XLVII., 1872, p. 77)† of this Society, an account of his journey round the coast of Yezo. The same route has been followed by Mr. L. Boehmer, Mr. C. S. Meik, Mr. Savage Landor, and others, and I on several occasions have travelled along many parts of it.

The general map of the country, although it appears under various authorships, has its chief foundation in the coast surveys of the English Admiralty, and the land surveys of Mr. N. Fukushi of Sapporo.‡

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* Paper read at the Royal Geographical Society, January 30th, 1893.

† The same volume (p. 343) has a valuable paper on the Coast of Yezo, by Commander H. C. St. John.

‡ The geological map accompanying this Paper is almost entirely the work of Mr. K. Jimbo and other members of the Geological Survey, the present writer being responsible for little more than the insertion of the volcanoes.

The journey to be described commenced on June 25th, 1891, when I and my companion, Mr. John Revilliod, left Hakodate in the s.s. *Harima-Maru* for Kushiro, about 200 miles distant on the south-east coast.

The first incident was the falling overboard of a quartermaster, who, although a life-buoy was thrown over and a boat lowered as soon as possible, was unfortunately drowned, and we put back to Hakodate, presumably to report the accident. I say presumably, because Japanese sailors are as superstitious as those of other countries, and the event may have been regarded as unpropitious, and a fresh start deemed advisable.

In Japan priests are taken out to sea to offer up prayers for the departed, and fifty miles away from land I have passed model junks which had been set afloat in connection with such ceremonies. On one occasion I witnessed the dismantling of a schooner, the building of which was nearly completed, because one of the carpenters engaged upon it had been killed.

Early next morning we passed the volcano of Esan, where there are some insignificant sulphur deposits. The volume of steam issuing from the various vents upon its sides did not appear to be so great as I had previously observed. The fluctuation in the quantity of vapours coming from volcanic sources is a matter often commented upon, but it is a phenomenon which, comparatively, has been but little studied. From the records of eruptions in Japan I find that there are eighty well-recorded instances of their having taken place during the winter months, whilst for the summer there are seventy-three such records. The difference is slight, but if we had the means of recording the intensity of these eruptions, the seasonal periodicity would in all probability become more marked. Another test of the fluctuations in volcanic activity would be observations on the volume of vapours discharged. Although this is effected by changes in barometric pressure, the volume may be augmented by clouds rolling inwards over the lips of craters, which quickly rise and add to the central column of heated vapour. More general effects might possibly be observed to coincide with fluctuations in seasonal stresses, to which the surface of our globe is subjected. As examples of seasonal stresses—which, with the exception of the writings of Dr. C. G. Knott, are phenomena that have been greatly neglected—we may take those resulting from the difference in the barometric gradient stretching across a country. For instance, the winter gradient between Japan and Siberia is very much steeper than the summer one. Again, the piling up of snow in northern regions gives rise to a stress which is greater in winter than in summer. It seems reasonable to suppose that causes of this description, because they are not momentary, but are continuous over considerable periods of time, might show their effects along lines of weakness. As Dr. Knott has shown that the periodicity of seismic activity may be related to these neglected stresses, it is not unlikely that fluctuations in volcanic

activity and those curious alterations in level which perplex astronomers, may also have relation with these varying loads.

In Volcano Bay I saw for the first time the fur seal migrating northwards. At a distance of several miles it appeared as if the surface of the ocean was covered with jumping fish. On approaching nearer, a glass showed them to be seals, which were diving and jumping out of the water, but all heading in the same direction. Before we passed them—which took several hours—hundreds were within 50 or 100 yards of the ship. The area they occupied was at least 5 miles square, and reckoning that each seal was, say, 50 yards from its neighbour, the "school" must have contained not less than thirty thousand individuals. During the winter the exact localities these creatures frequent is not known, but it is probable that many of them are in the ocean off the coast of Japan. The seals, about the time I saw them, were making their way to their northern breeding-grounds, which are Robben Island, off the Saghalin coast, two or three small islets in the Kuriles, the Komandorsky Islands (Behring and Copper), and the Pribilov Islands (St. Paul and St. George). Yezo fishermen, during the winter months, capture a few hundreds of these animals off the south coast.

Kushiro is celebrated for the number of pit dwellings, which line the cliffs above the town, and the stone implements which may be collected. Some of the excavations are suggestive of old fortresses, and from the heaps of stones they contain we might infer that they were the missiles used by the "Koropokkuru" when fighting with the Ainu. The town itself is one of the old settlements on the coast, and contains several thousand inhabitants. It has a trade in marine products, and is a port from which large quantities of sulphur are shipped.

On the day of our arrival we rode a distance of about three miles to the Harutori coal mine, at which there is an output of some 40 or 50 tons per day. To the north and south of Kushiro, and even in Kushiro itself, there are several very similar outcrops of coal; but it is not likely, with the western coalfields already opened, that these deposits can ever attain anything more than a local importance. That evening, through the kindness of the engineer connected with the sulphur deposit at Atosanobori, we obtained a passage in a small river steamer up the Kusuri as far as Wakorobets. It was extremely uncomfortable, the cabin being less than six feet square, and swarming with mosquitoes. The night was spent listening to the "ototoguisu" and other birds singing in the reeds which lined the river banks, and fighting with our insect companions. At daylight we saw we were in a rapid, tortuous river, about 30 yards in width. On our right were hills some 200 feet in height, and on the left, a densely wooded country. Now and then an opening showed us a reedy plain, and the volcanoes Ōakan and Meakan in the distance. There were no signs of roads or habitations. At five o'clock in the morning, after a seven hours' voyage, we landed at

Wakorobets, where there is a single house. At this point steam navigation ceases, and the boats used in carrying sulphur are poled and tracked as far as the refinery at Shibetcha.

After a delay of three hours, two Ainu and four horses were obtained, and we made our way by a forest path to Shibetcha, a distance of 10 miles. Shibetcha is a pleasant village of a few hundred inhabitants, and apparently owes its existence to the sulphur refinery (at which some fifty workmen are employed), and a convict station. Both of these establishments were visited; the latter, where Tsuda Sanzo, the policeman who attempted the life of the Czarewitch, was confined (now dead), consists of a series of wooden buildings, and houses for officials, enclosed by high palisades in a square, covering, say, 30 acres. The dormitories are barn-like structures some 60 yards in length, with a passage down the centre, in which, during winter, stoves are placed. Right and left, forming the sides of the passage, are heavy wooden bars, opening into cells of about 10×12 feet, each of which holds five or six men. These cells are practically used as sleeping places, the inmates during the day being engaged in other parts of the enclosure, or outside, as carpenters, blacksmiths, tailors, lamp-makers, printers, farmers, &c. At the time of our visit there were about eighteen hundred prisoners at this place, about an equal number being away, camped in the woods cutting roads. One man was undergoing solitary confinement, but the dark cells we saw were empty. The food consists principally of rice and barley, with beans in various forms, and *daikon*, a very large kind of raddish, to give it a flavour. Everything looked clean and tidy, and from a Japanese point of view it could not be said that in this prison, or any other which I have visited, the inmates suffer unusual hardships. Sleeping on the floor, with a small rectangular block of wood for a pillow, exposed to intense cold during the winter, and subsisting on a vegetable diet, would, however, most certainly affect the physical condition of the ordinary European.

It is generally supposed that a man obtains nutrition by the assimilation of a certain quantity of albuminous matter, but the Japanese as a nation are a testimony that such a rule is not universal in its application. Many in this country seldom, if ever, see meat, and they get but little fish, yet they are muscular and healthy. Dr. E. Baelz, of the Imperial University of Japan, who has given great attention to this subject, and has put his views to experiment, finds that men who run, dragging after them heavy loads, for a distance of 30 miles per day, continuously for, say, a month, and living almost entirely on vegetables, do not lose, but generally gain, in weight. Speaking for myself, I find that after a month on Japanese food—of which I have learned to be extremely fond—I usually lose about ten pounds in weight. The hardy peasant of the Tyrol, who eats but little meat, certainly has his nitrogenous cheese; similarly, the Japanese has his nitrogenous beans; but this

hardly explains why the people of this country obtain nutrition from a class of food which it is difficult to imagine would be sufficient to support the ordinary European. It may be, as Dr. Baelz believes, due to differences in the general conditions of life. For example, the Japanese, both by day and night, are surrounded by more fresh air than Europeans; it may be, as I suggest, the result of a long process of natural selection, the present natives being the survivors, with an organisation capable of deriving nutriment from food containing but little nitrogen. Perhaps it is both. But whatever it is, inasmuch as foreigners, belonging to a non-treaty country, who become prisoners, at the present time may be subjected to the same prison regulations as the Japanese, and that within a few years all Europeans may come under the same control, the subject of prison diet and treatment is a matter for consideration.

A ride in a sulphur waggon along a railroad 20 miles in length brought us to Atosanobori, a volcano which supplies the ore for the refinery at Shibetcha. Right and left we had untouched forests of oak, elm, and birch; on the high land were *toda mats* (*Abies sachalinensis*), a few maples, and *katsura* (*Cercidiphyllum japonicum*). The undergrowth consisted of grasses and ferns, with here and there tall lilies, and in the marshy places blue irises. Yezo generally is poor in fine scenery; but the view of Atosanobori, towering up in a grand rugged mass, with huge pulpit-like rocks perched one above another, its yellow patches of sulphur and steaming fumaroles rising from a plain fringed with forests of dark-green pines, was certainly impressive.

The accommodation for travellers at this place is poor: three of us spent the night huddled together in a small loft, burning sawdust and sulphur to drive away the mosquitoes. To see the mountain occupies a day. After a climb of about 500 feet you enter an old crater, which forms a valley with a V-shaped section, enclosing the central cone. It is from this valley that the sulphur, which is now nearly exhausted, is being extracted. The bulk of it is mixed with earth and stones, and appears to be the result of precipitation from sulphurous vapours. In the bottom of some of the valleys, however, it exists as if it had been solidified in lava-like streams from a state of fusion, the pure ore being above and the impure immediately beneath. At the fumaroles and in crevices in the rocks, sulphur can be seen in the process of formation. Round some of the steam vents banks and beehive-like structures, covered with the most beautiful festoons and draperies of canary-coloured sulphur, have been formed. Near some of these you hear a sound of water surging to and fro and boiling, as if there was a cauldron beneath your feet. In one valley the steam-jets appeared to form an avenue; on both sides were roaring columns of vapour. You could neither see nor hear, and without a guide we should certainly not have ventured in between them. At one of these orifices my companion, Mr. John Revilliod, threw in some fair-sized rocks, which were immediately shot some 50 feet

above our heads. On leaving this valley I suffered intensely in the eyes, and four hours afterwards they were still painful. Another effect of the vapour was to blacken my watch and all the silver money in my pocket.

Two years ago, for a period of several days the internal roarings and rumblings at this mountain were so pronounced that the miners, fearing an explosion, left off work; but even as it now is the violence with which steam escapes at Atosanobori exceeds anything I have seen elsewhere in Japan, Iceland, or New Zealand. In most volcanic districts you have boiling cauldrons and steam-jets, but here you have pine-tree-like columns of steam, which, from the pressure at which they issue, are invisible near their base, and roar so loudly that you cannot hear your neighbour's voice. I was told that the intensity with which the steam issues fluctuates with the weather.

The only animals I noticed in this neighbourhood were two eagles and eight common green snakes. From my own observations snakes are far more common in the northern part of Yezo than they are in the southern part of the island, where it is only rarely that I have seen them.

From Atosanobori a ride of about 15 ri (37 miles) brought us to Abashiri, on the north-east coast. The road has only recently been cut through the forest, and but few travellers pass along it; the result is that parts of the track are already overgrown with grasses. Five miles from our starting-place we were on the top of a pass, from which there is a gentle descent towards the sea.

From this point, looking backwards, the view of Atosanobori, with the panorama of lake and forest, is extremely beautiful. But for the occasional twitter of a bird or the flutter of a grouse all is still. Once or twice I saw a large red squirrel. Every 4 or 5 miles, generally in some marshy hollow, we passed the ruins of a *koya*, or shed-like barrack, where the convicts who had made the road had been temporarily housed. In places the forests of oak and birch were particularly fine, and would yield excellent timber. On nearing Abashiri, we passed through groves of white-stemmed poplar, the wood of which is used in making matches, an industry in which the Japanese have been so far successful, that not only do they supply their own country, but large quantities are exported to China and elsewhere.

At the time of our visit to Abashiri, a small factory for the manufacture of matchwood was being erected. The reasons for building a mill in this out-of-the-way place are twofold:—First, the wood when green cuts better than when dry; and secondly, it is only the outer part of the tree which is used. There is, consequently, a considerable quantity of valueless waste. Opposite the mill is the Abashiri convict station, which, although only a branch of the Shibetcha establishment, is equally large. Twelve hundred of its inmates, I heard, were away in the woods road-making. At Abashiri itself, which is now a village of several hundred inhabitants, we heard a little about the possibilities of

a timber trade, an industry which, if the Japanese regulations permitted foreign vessels to load at ports where logs could be brought to the coast, might be a source of considerable revenue.

Yezo, which has an area of 36,882 square miles, has been described as one vast forest. Many parts of it are certainly well timbered, and much of the wood like oak, elm, walnut, birch, and maple, would be of value on the American coast, where pine predominates. Logs of either hard or soft wood can be laid on the beach at Abashiri at five sen (about 2d.) per cubic foot. A log of 20 cubic feet, which represents anything but a large tree, is therefore worth one *yen*, or, say, 3s. 4d. As a measure of the accessible forests, we may assume that over the half of Yezo there are 7000 such trees to the square mile, which means that in the whole island there are 129 millions, worth £21,000,000 sterling, which might be gradually exported at a profit to the sellers.

One day at Abashiri was spent in sport; but the result was poor, my companion's bag consisting of a few snipe and one poisonous viper =*Mamushi* (Jap.). They were all fried together, the snake being included, because, according to a Japanese view, the *mamushi* is not only excellent in flavour, but it possesses certain health-giving properties. From Abashiri, a ride of 25 miles, partly along the beach, and through sand dunes and long grass by the side of lagoons, brought us to Shari. Everywhere the track is fairly well defined, and is probably much the same as when traversed by Blakiston.

Amongst other uncomplimentary statements about Japan, it has been said that it is a country where the birds have no song and the flowers no scent. This certainly does not apply to this part of the country, for on this ride the air was filled with song and perfume, skylarks were singing, reed-warblers twittering, and pigeons cooing, while banks of wild roses filled the atmosphere with fragrant odour.

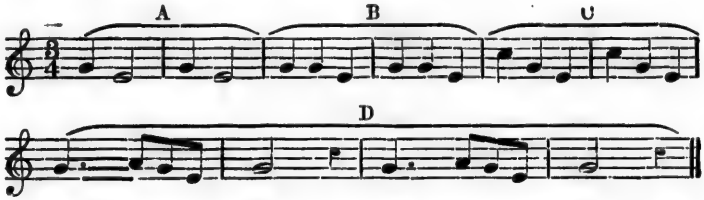
Shari is a settlement of about 100 people, chiefly Ainu. Our hostess, who had a Japanese husband, was an Ainu. Intermarriage between Japanese and Ainu is certainly limited; but in considering the genealogy of the former, the possibility of Ainu influence having been greater than it is at present is a factor not to be overlooked.

After a night with a variety of insects, we embarked on the morning of July 5th in a "dug-out" about 3 feet wide, with two old Ainu men as rowers, for a 30 or 35 miles' pull along the coast, to see the volcano of Shiretoko. The journey, which occupies thirteen hours each way, can only be undertaken during the finest weather. Over 60 miles in a boat little more than a hollow tree-trunk, in which, for the sake of stability, you lie down, for the most part beneath cliffs 500 to 1000 feet in height, which, in case of a capsize, would render escape almost impossible, is a trip not readily forgotten. The towering cliffs of andesite and volcanic agglomerates, sculptured into an infinity of forms, hollowed into caverns, cut through by crevass-like clefts, and

worn into all sorts of fantastic shapes, fill the traveller at first with wonder and then with awe. As the time goes on, and the chances of landing, even in a recess or on a ledge of rock, become fewer, one casts many a glance seawards with a certain feeling of anxiety lest there should be a change in the weather, and wishes for the end of the journey. The only cheering thing was the incessant chanting of our boatmen. One air, which, with but very few breaks, they kept up for thirteen hours, was as follows :—

I give this partly because Ainu music has hitherto received but little attention, and also because I think Ainu boat melodies are extremely pretty. The few I have heard have been in a major key; there is an absolutely regular rhythm, and although plaintive, they are to ordinary ears quite European in their character.

Here is another example :—



The above phrases, A, B, C, D, may be sung successively, each being repeated an indefinite number of times, or any one, like A, may be sung with any other, for example, with D. My friend, Mr. H. J. Snow, tells me that in Northern Kamchatka the melodies of the natives have also a character which is strongly European.

What was sung by the boatmen was the air. Sometimes this was sung in unison, and at others one rower would continue singing the first two bars, whilst the other sang either of the remaining two bar phrases, which from time to time he varied with curious but musical little grace-note-like trills. A bass may be added as representing the sound of the oars, to the splashing of which they kept absolute time. It must be mentioned that the Ainu row by pulling the right and left-hand sculls alternately—not together. The only music the Ainu are likely to have heard would be Japanese; and Japanese music is as far removed from the Ainu boat songs as it is from the music of the West. Although an attempt has been made to discover a resemblance

between the music of Japan and that of the Occident, the differences in intervals, scales, and time are so great, that a Japanese tune cannot be satisfactorily reproduced on a piano any more than a European air can be reproduced on an instrument with Japanese intervals. Japanese street music as played upon Japanese instruments is, to European ears, usually repellent, there being neither tonality, time, rhythm, nor any of those qualities which European ears desire.

At Shiretoko the cliffs, although perpendicular, are not so high as at neighbouring places. At their base, some 20 feet above sea-level, there is a ledge about 100 yards in length and 20 yards wide, on which are fifteen or twenty houses, and in front of this a bouldery beach about 20 yards broad. Here we were well received by Mr. Minatsuki Zenosuke, the owner of the sulphur mine. To reach the mine, the visitor can either proceed directly up the cliff by means of ladders, or go to the end of the ledge and take a more circuitous route, where a way has been made by cuttings in the cliff and building brackets round the face of projecting rocks, with here and there a few ropes for the traveller's assistance in the more dangerous parts of the ascent. Having reached the top of the cliffs, a climb of 1700 feet, which is about a third of the way up the mountains forming the peninsula, you reach the crater, from which huge volumes of steam are always issuing. In form the crater is a funnel-shaped opening 30 or 40 yards in diameter at the top, and about 40 feet in depth. Below this there is an aperture like a well perhaps 15 feet across, in which, at an unknown depth, some material is violently boiling.

In 1889 a large quantity of pure yellow sulphur was erupted. Part of this ran as a lava-like stream down the valley, and part appears to have been thrown violently upwards, to fall like gigantic drops of rain. For several hundred feet higher up the mountain than the crater the effects of this sulphur shower are seen in the splashes on the boulders, the cement of sulphur which fills every crack, and a layer of spherically-shaped pebbles, which probably fell like hail. In 1890 another eruption —but this time of boiling water—took place, and a great portion of the sulphur was washed down the valley to be lost in the sea. In consequence of this unforeseen occurrence, the Shiretoko deposit has been greatly reduced in value. The sulphur that remains is, however, remarkable for its purity, requiring little more than remelting before exportation.

One feature differentiating the Hokkaido line of volcanic openings, commencing from Nasutake, in the main island, and passing through Yezo and well up into the Kuril Islands, from the line almost at right angles running to the south-east down into the Pacific, is, that the former yield large quantities of sulphur. I have seen three or four cases where this material has flown in streams like lava. I am not aware that any careful comparisons of the other eruptive products of these two lines

of volcanoes have been made, but from general observations I am inclined to the opinion that the rocks of the Fujisan, or south-eastern line, will be found to be more basic—augitic andesites approximating to basalt being common—than the rocks of the northern line.

After two days at Shiretoko, another thirteen hours' voyage in our "dug-out" brought us back to Shari. The only life we saw was one or two fishing eagles, and long lines of cormorants, puffins, and guillemots, which, with soldier-like erectness, sat on the narrow ledges of the cliffs and peered down into our boat as we passed beneath.

From Shari we took a road, which has been recently made, to Shibets, a distance of 37 miles. About halfway, at Rubets, there is a solitary house, where we changed horses. All the way we had lovely forest scenery, but saw no people. On the low ground, elms and oaks, with a tangle of vines, predominated, and on the high ground tant firs (*todamats* = *Abies sachalinensis*) hung with moss. *Fûke* (*Petasites japonica*), with leaves 3 and 4 feet in diameter, and thistles fully 14 feet high, were common. From Rubets, which is at the water-parting, the road is rough, and as the rain came down in torrents, travelling was anything but pleasant.

From Shibets, which we left on July 7th, to Nemuro is another ride of about 37 miles. The road has been described by Blakiston. The country is flat; there are some awkward ferries, and many fishing stations. On our way we saw five eagles, each perched within easy shot. We reached Nemuro at night; there was a dense fog, and we were soaked with rain. Owing to the fall of my horse at the entrance to the town, for the next few days I was compelled to rest. I had not seen Nemuro for at least ten years, and was surprised to find it had grown from a village of 800 people to a town of from 8000 to 10,000.

The next section of our journey, which was to the island of Kunashiri, was chiefly of geological interest. As there was no regular communication across the straits, we engaged a small junk, in the hold of which we formed a rude kind of camp. At the two places visited—Rausu, on the eastern side, and Ichibishinai, on the west coast—there was much of interest; but the leakiness of our craft, adverse winds, fog, and the want of proper equipment and food, made the trip very uncomfortable.

In Kunashiri, although the prominent peaks are volcanic, there is a fair development of tertiary tufts, especially at the southern extremity of the island. On the north-west shore, veins of lead and copper have been discovered. On the south end of the island is the village of Tomari, from which tracks lead up the east and west coasts for some 25 miles. Here and there are a few small fishing stations, which during the winter months are for the most part deserted. Both at Rausu and Ichibishinai there are sulphur mines; those at the former place are, however, practically exhausted. On the shore there are five or six deserted buildings, and the ruins of a refinery. A pleasant walk of

about 3 miles up a roadway covered with boards, on which the waggons carrying ore were wheeled, brought us to the mine. This is a patch of bare greyish-white rocks and earth, perhaps 300 yards in length, from which at two or three points steam escapes. What remains was evidently found to be too poor for further working.

Looking backwards down the valley, between hills covered with *toda-* and *shinko-mats*, one sees a plain of forest, lakelets, rivers, and a coast indented with coves and bays, beyond which rises Cha-cha-nobori, one of the most graceful of Japanese volcanoes. From a geometrical examination of the contour of this and similar volcanoes, the writer arrived at the conclusion that the volcanic curve could be represented by a mathematical expression. The curve is one of equal resistance, by which is meant, that the mountain, for the size of its base, is just self-supporting; and with the same materials its height could not be increased without increasing its base. Mr. F. Becker, of the United States Geological Survey, who extended the present writer's observations, suggested that the study of the form and dimensions of lunar volcanoes might assist us in determining whether lunar lava is similar to that of the earth, the shape and height of a mountain piled up by volcanic action being dependent on the density and resistance to crushing of the materials out of which they are built. The form of mountains is modified by processes of disintegration and other causes, but an analysis of the curvature of volcanoes shows that their form practically coincides with that they must necessarily have to reach the height to which they rise. The crater of Cha-cha-nobori, out of which the upper peak rises, is said to be filled with water, and therefore the summit of the mountain is regarded as inaccessible.

Ichibishinai, on the west coast, is extremely interesting on account of the existence of a small lake called Ponto, which in several places is boiling, and depositing on its bed and around its shores what is apparently a fine black sand, but which is practically nearly pure sulphur. Here and there the deposited sulphur is in the form of hollow spheres about the size of an ordinary marble. The water of the lake, especially at its northern end, where some sulphur miners have built a box-like bath, is extremely acid. Free acids, like hydrochloric and sulphuric, are not uncommon in certain hot springs in Japan, and it is these, together with hydrogen, and possibly other sulphides,* which have rendered them so efficacious in the curing of certain skin diseases, and even leprosy.† The therapeutical value of the Ponto springs should certainly be determined.

Ponto, which may be 200 yards in diameter, and the Ichibishinai Lake, which is about 2 miles in length, both lie in the same crater, the

* In the cold springs of Kusatsu, Dr. E. Divers, F.R.S., has detected arsenic.

† See 'The Annals of Hygiene,' vol. vi., Nos. 2 and 10.

former on the south-west side of the rugged central cone, and the latter on the north-east side. On the Ichibishinai side of this cone, facing the lake, there are hot springs, and a sulphur deposit, which is being actively worked. Looking across the lake one sees a fringe of trees, white steam rising from some hot springs, and green grassy slopes which form the sides of the ancient crater.

After returning to Nemuro we again set sail, rounding the Shiritoko peninsula to Abashiri once more, reaching that place on July 26th. It was with feelings of satisfaction that we again found ourselves on shore. Life in a cabin about 3 feet 6 inches in height, swarming with the worst forms of vermin, with an insufficiency of food, the only amusements being to watch a whale or a school of porpoises, and now and then, with the help of a spinning bait, to catch a fish, could not be considered a pleasant experience.

Half a day was spent at Abashiri in an expedition through swamp and forest to the southern end of the lake, where there is a deposit of diatomaceous earth. It crops out about 20 feet above the level of the lake, at the base of a range of low hills perhaps 100 feet in height. It is also seen in the bed of the lake itself; the material is whitish-grey in colour, very light, and apparently rich in species.

From Abashiri—a ride of 14 miles, first over pine-covered hills and across small valleys filled with ferns and *fuki*, then along a shore glistening with beds of black magnetic sand—we reached the Ainu settlement of Tokoro. The people here had what is rare amongst the Ainu, namely, a comparatively clean appearance, and seemed well-to-do. A sharp ride of forty minutes farther, over and between grass-covered dunes, and we were at Saruma, another Ainu village.

Next morning, after spending two hours in getting our horses over the estuary at the entrance to the Saruma Lake, we started for Yubets, our path being along the sand ridge or spit separating the lagoon-like lake from the sea. The distance, which is 20 miles, was covered in four hours, the horses trotting slowly along a track, occasionally through woods of small scrub oak, but usually over grassy slopes. The spit, which is about half a mile in breadth, is one of the largest on the coasts of Japan. Between the places mentioned there are no inhabitants, and the general features of the country are the same as they were when visited by Blakiston some twenty years ago. The most interesting objects are perhaps the flowers; on the sand dunes wild roses occur in banks, and a wild pea, Campanulacea, and pinks are common. In the swamps are blue irises; amongst the grasses tall artemisia and the fern-like thalictrum.

Yubets is a forlorn-looking, squalid little Ainu village of about a dozen huts. It was here we made preparations for starting inland, engaging two Ainu as servants and guides, and five horses. On July 29th all was ready; but on account of the incessant rain we did

not start until the next morning. The prospect was anything but inviting; the distant mountains were covered with clouds and mist, whilst the Yubets River, swollen by the rain and yellow with suspended mud, warned us that fording streams would be attended with difficulty. Our objective point was "Hachi-no-Koya," or the eighth camp, where we should find several hundred convicts engaged in bridge-building. They had worked their way inland from Abashiri. Our direction was due south up the right bank of the Yubets River, and the distance about 20 miles. All the way, except where it was swampy and at the fords, there was a fairly well-marked track formed by the convicts in carrying up provisions from the coast.

From Yubets, which was the last settlement we were to see for the next few days, we crossed a patch of wood, and entered on a plain covered with a jungle of rank grass. At a distance, these plains, which are common on the lowlands of Yezo, have the appearance of fertile prairies; but when crossing them, unless there is a path you find an almost impenetrable tangle of grasses 6 or 7 feet in height, thistles 12 or 14 feet high, thaliotrum, artemisia, and blue-spiked veronica all matted together with convolvuli and other creepers. After going 5 miles, we came on to the bank of the Yubets River, up which we continued for about 7 miles, through woods of maple and elm. The path was bad, being wet, full of holes, and crossed by innumerable gullies and small brooks. Beyond this came more jungle grass-land, with here and there a walnut tree covered with fruit. The eighth camp was reached about four o'clock in the afternoon, after a five hours' ride. Here we found a large shed, about 80 yards long and 20 broad, covered with grass. This was the temporary home of three hundred convicts, who were engaged in cutting a road and building light bridges. The convicts who are selected for work of this description are men who have served a number of years, and who have obtained a certain number of stripes for good conduct. When a convict has obtained four such stripes he may possibly obtain permission to settle outside the prison as a farmer, and when surveillance ceases, perhaps be absorbed amongst the ordinary colonists. The number of guards, or *Kanshi*, at this particular station, was thirty, or one for every ten prisoners. Although occasionally convicts escape and guards are killed, these events are of rare occurrence, the prisoners knowing that a half-earned pardon must be lost, and that escape from the forests of Yezo is practically impossible.

Inside the *koya* the convicts sleep together on beds of grass ranged right and left of a central passage. We had a bed of grass (with the additional luxury of two bear-skins), which was prepared for us at one end of the establishment, among the guards who were off duty. At 5 A.M. there is an inspection, and after breakfast work commences. Until 11 A.M. the convicts listen to the echo of their axes and the crash

of falling trees, when dinner is served. At 5 P.M. work ceases. Each man has a bath, then comes supper, and at 7 P.M. all are back inside the *koya* for the night. The food is chiefly rice and vegetables; but should there be a run of salmon in the neighbouring stream, both officers and prisoners fare the better for it. From what I saw, grilled snake did not appear to be considered unpalatable.

We left next morning at seven o'clock, our road being across jungly grass-land and through exceedingly swampy woods. Oaks covered with mistletoe were common. After an hour's ride we were amongst schistose hills, with the Yubets River on our right. Instead of muddy banks, for the first time we saw rocks and shingly beaches, which, with the roaring of the river and the pine trees on the hills, told us we had already reached higher ground. About noon we passed the tenth convict camp, which was deserted, its late occupants having been marched further up-country to construct a bridge over the Yubets River. Whilst resting outside this deserted shed, I was struck with the death-like stillness and absence of animal life which reigns in these northern parts. From Yubets on the coast to the watershed in the centre of the island, with the exception of a few house-flies at the station and one beetle, I did not see an insect of any kind. I heard a cicada and saw one squirrel, but do not remember seeing a single bird. But for the bubbling of a stream or the fall of a rotten tree all is still. The only things to arrest one's attention were the trees, and the oaks, elms, and ash were as fine as I have seen in any part of Yezo. Beyond this, the woods were chiefly pine. About 5 P.M. we reached the site of the twelfth station, where the convicts had only arrived that afternoon.

The latter part of the journey was along the face of steep hills above a boiling torrent, and beneath high pinnacles of rock, above which we now and then caught glimpses of the blue sky, to see which was a great relief after the monotony of the everlasting greenness of the forest. At night we slept in a small grass hut with two of the guards, the large *koya* where the convicts were to be housed not having been built. Although the woods leading to this place had been traversed but a few hours previously by a band of convicts, it was only here and there that the track they had followed was visible. Usually we were crashing our way through beds of *fuki*, or tall bamboo grass.

Next morning, August 1st, we were up at four o'clock, and after a scanty breakfast, said good-bye to our convict hosts. We forded the Yubets River just above the camp, where it is only about 20 yards broad and 3 feet deep. To within a few miles of this place it had been broad, rapid, and muddy, and so far as we saw, without any deep pools. Near the river our horses crashed through large patches of *fuki* and clumps of ferns (*Onoclea Germanica*), the fronds of which were arranged like Prince of Wales' feathers. Above our heads were oaks

and alders, with here and there a trailing *kokwa* (*Actinidia*). It was not long before we were struggling through a sea of dark green *sasa* (bamboo grass). A cavalcade passing through this at most only shows the heads of the riders, whilst at times the presence of both horse and rider is only indicated by the rustling of the canes. Our progress was slow; twice we crossed small streams with shaley beds. On the edge of one of them I noticed a few large boulders of obsidian. Our chief difficulties occurred where we had to get our pack-horses through the branches and over the trunks of fallen trees, which in places were strewn in all directions. Occasionally patches of bog caused us some little trouble.

At ten minutes past noon, after a tedious scramble up the bed of a watercourse, we reached the water-parting between the head waters of the Yubets and the Ishikari Rivers. (We were here about 4000 feet above sea-level.) For a few minutes we halted, and away to the north saw Teshiwo-dake (6500 feet), and a few rounded hills covered with *shinko-mats*. From the ridge the descent commences immediately, and in a few minutes we were again in the bed of a small stream running eastward, with dark forest and jungle-like undergrowth on both sides. During the afternoon we came upon a partially completed road, but this was in places covered by so many fallen trees and so much grass and *sasa*, that it was difficult to distinguish the road from the forest—in fact, crashing through the forest undergrowth was often preferable to following the clearing intended for a road. On this day, for the first and only time, we saw a little animal life, first disturbing a bear, then a fox, and once or twice a covey of hazel grouse.

At half-past six in the evening, drenched with rain, we entered a small clearing, where, to our delight, we saw a house. It was untenanted, and had evidently been built, in anticipation of the completion of the road across the island, for the accommodation of travellers. Although we missed the softness of a bed of grass, it was a comfort to have protection against the rain.

Next morning, notwithstanding that the rain continued, after carefully closing the door of our shelter, and leaving a ball of rice and a box of matches for the next comer, we pushed on, and at noon reached the bank of the Ishikari, which here is a rapid stream about 100 yards in width. It was evidently too deep and rapid to be forded, but as there was a cord stretched across the river, and a "dug-out" lying beneath the bank on the other side, we knew that we had reached a ferry. Making ourselves conspicuous, it was not long before what promised to be assistance made an appearance on the other shore. First came a woman, and then two old men: the latter got into the boat, and catching hold of the cord, commenced the passage over. No sooner had they started than the rope parted on their side, and they were swept across and landed on our beach. They told us they were living in a deserted

koya built by the convicts, that we and the baggage had better go over in the boat, and that the horses must wait until the river fell. The "dug-out" being small, the baggage was sent away first. It had hardly reached mid-stream when a paddle broke, and the boat was swept with lightning speed down a long reach towards some heavy-looking rapids. In a few minutes it was amongst high yellow waves, and then lost to view. We at once sent off our two Ainu down the stream to see if anything had been saved, and for more than an hour we stood by our bare-backed horses, feeling sure that not only two men, but all our provision and baggage, had been lost. Although the canoe had been twisted about in all directions, good fortune carried it through without capsizing, and by evening, although it was impossible to get the boat back, we were sitting on a tree trunk, with our feet in mud, round a fire, beneath an improvised shed. It was a miserable night, and rendered more so by swarms of *nuka* (sand flies), the bites of which remained visible for nearly three weeks. I have had an eye completely closed by mosquitoes, and been disfigured about the face, but I never before experienced markings which were so permanent as those produced by the *nuka*.

Next day we were rescued by a party of Ainu. The day after the horses were got over, and the day after that we rode through tall grass, which in places hid horses and riders, to the military settlement of Kamikawa, situated a few miles above Kamikotan.

At this place the Ishikari, which is here a roaring river some 150 yards in width, rushes in torrents between huge lumps of rock, at the bottom of a gorge-like valley. Round the side of this a road has been cut, and at every few yards there are exposures of schist, black slate, and serpentine. Beyond this there is a dreary road through forest, with at intervals of a mile or so the house of a settler, or a gang of convicts in charge of a policeman, to relieve the monotony.

That evening, August 5th, we reached a settlement of two or three houses called Ōtoibake, where we slept. Next morning we rose at four o'clock and started again, passing on our way a clearing where gangs of coolies and convicts were engaged in constructing a road, and the Sorachi Tonden, where there are some four hundred and fifty houses built for the military farmers. Soon after noon we reached Sunakawa, on the railway line recently made to carry coal from the Sorachi mines to Otar, on the coast.

Although many miles of forest still lay between us and the sea, from this point onwards we always had a roof over our heads at night, and so far as hard travelling was concerned, Yezo had been crossed.*

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* A report of the discussion which took place after the reading of this Paper, and that by Mr. Savage Landor on his journeys in Yezo, will be found at the end of the latter, which follows this in the present volume.

APPENDICES.

GEOLOGICAL NOTES.

THE first attempt to make a geological survey of Yezo was that of Mr. Benjamin Smith Lyman, who, in 1877, published a Government report, accompanied by a geological sketch-map. In 1890, Mr. K. Jimbo, who is at present in charge of the Geological Survey Department, published a geological map with an explanatory text. Many persons, including myself, have written on special points connected with the geology of Yezo. Largely in consequence of palæontological assistance, in Mr. Jimbo's account of the geology of Yezo we find groups of rocks classified according to their chronological sequence.

Mr. Lyman, who for the most part gave local names to groups of rocks, chiefly devoted himself to the survey of coalfields and oil lands.

The geological features of the island, so far as they are at present known, consist of:—

1. Large deposits of volcanic rocks, the first of which is a V-shaped mass, with its apex pointing south-west at Yubaridake, its arms running respectively to Esashi, on the north coast, and through the Shari peninsula to C. Shiretoko (Shiretokozaki), in the north-east; the second is a roundish mass forming the Mashiki Mountains; and the third covers the country from coast to coast round Shiribets-Yama. Smaller masses of these volcanic rocks, which for the most part are pyroxene andesites, exist in other parts of the island.

These areas of volcanic rocks constitute the highlands of the country, peaks rising to a height of about 6000 feet. According to Mr. N. Fukushi, Nutapkaushipe is 7500 feet above sea-level. Perforating these rocks we have the vents of the modern volcanoes.

2. A little to the eastward of the apex of the V, and running in a south-easterly direction to Cape Erimo (Erimozaki), we have a range of granite hills, which right and left are flanked by schists, clay-slates, limestones and sandstones, &c. These same rocks are found in patches up the western side of the V. They also exist on the eastern side of the same arm. In the limestones and sandstones of a similarly occurring series round the volcanic rocks in the southern part of the island, Crinoids, Radiolarians, and sponge skeletons have been discovered, and the stratified series is regarded as Palæozoic.

3. In patches extending southwards from Cape Soya (Soyazaki) to Urakawa, on the south coast, are rocks of Cretaceous age, containing Inoceramus, Trigonia, Terebratula, and many Ammonites like Phylloceras, Lytoceras, Anisoceras, Desmoceras, &c.; altogether some sixty or seventy species have been described. My own collection of these fossils was placed at the disposal of Dr. E. Naumann when writing on the occurrence of the Cretaceous rocks in Yezo ('Mitt. d. Deutsch. Gesell. fur Natur und V lkerkunde Ostasians,' 1880). The palæontology of these rocks, which are chiefly sandstones and shales, has been more thoroughly studied by Mr. Matajiro Yokoyama, who has worked not only on recent collections, but on the old collection of Mr. B. S. Lyman (see 'Versteinerungen aus der Japanischen Kreide—Palæontographica,' Bd. xxxvi.).

4. Surrounding the patches of Cretaceous, and often in contact with the Palæozoic and old volcanic rocks, we have the sandstones, shales, tuffs, and breccias of Tertiary age. This formation, which is divided into beds of Pliocene and Miocene age, covers the greater portion of Yezo. In some districts the Tertiaries are

unconformably superimposed upon the Cretaceous; but there are districts where, by inversion or faulting, the order is reversed; and as the lithological characters of the two formations are often very similar, the separation of them has presented problems of considerable difficulty. The coal occurs near these junctions, being usually in the Mesozoic beds, but sometimes in the Cretaceous. At the coal mines plant remains are common. My own small collection was, I believe, forwarded to Dr. A. G. Nathorst, of Stockholm, who has done so much for the palæobotany of this country. The fossils generally of Hokkaido have, however, been carefully studied by Mr. Yokoyama, and the results of his researches published in reports connected with the survey.

Mr. K. Jimbo, in the explanatory text accompanying his geological map of Hokkaido, which is the best summary of the geology of Yezo, mentions five localities where tertiary beds of diatomaceous earth occur. To these I may add a range of bluffs on the north-east corner of the Abashiri Lake, from which examples have been taken and forwarded to specialists.

5. Filling up the river valleys, we have quaternary gravels, sand, and earths, the most noticeable members of the series being intercallated beds of pumice. In sections along the road between Tomakomai and Mororan, four or five of these may be counted. These I have often described as evidence of the frequency and intensity of volcanic eruptions.

Volcanoes and Earthquakes.

As I have already written at some length on the volcanoes of Yezo ('The Volcanoes of Japan, Trans. Seis. Soc.,' vol. ix., Part II.), I shall confine myself to the enumeration of the volcanoes on the map, and to descriptions of those which have not been previously visited, which latter are included in the general notes of travel. In consequence of the work of Mr. Jimbo and his assistants, my students and my own observations, the list, as published in my original memoir in 1886, has been considerably improved.

It will be observed that the volcanoes occur in the areas of old volcanic rocks. A striking feature connected with these volcanoes, and one which distinguishes them from the volcanoes of the main island, is the fact that they have yielded enormous quantities of sulphur. In three cases I have seen solid lava-like streams of this material.

Earthquakes in Yezo, although not quite so frequent as in the main island, are yet quite numerous. At the three places, Nemuro, Erimo, and Hakodate, which are on the eastern and southern parts of the island, the number of shocks recorded in 1888 were respectively 16, 6, and 7; in 1889 the numbers were 48, 7, and 22. On the western and northern sides of the island disturbances are rare. The rule respecting the distribution of seismic energy may be taken as similar to that of the main island, or even for South America—namely, earthquakes do not originate from the volcanoes, but chiefly along the coast and beneath the water, where the land slopes down steeply beneath the deep ocean. At Hakodate, Sapporo, Nemuro, and probably at other places, seismographs have been set up, whilst many other towns are included in the "post-card" system of recording earthquakes common to the empire. In this system, which I inaugurated in 1881, there are 650 or 700 Government offices where, after a shock has been felt, they forward an account of the same to the Central Earthquake Bureau in Tokio. In this way the area disturbed by every earthquake—of which there are from 450 to 700 per year—and its approximate origin, are determined. By co-operation in the above scheme, although the interior of Yezo is unknown, the inhabitants on its shores are assisting in work which has already placed seismological speculations on a firmer basis.

Useful Minerals.

Coal.—By far the most important mineral production of Yezo is its coal, of which very many valuable seams have been discovered. The outcrops of these for the most part follow a north and south line in the Miocene Tertiaries, near their junction with the Cretaceous formations. A little coal is also found on the east coast, to the east and west of Kushiro. To exploit these mines, in 1880 a line of railway was opened from Ōtaru through Sapporo towards Poronai. This has since been continued to Sorachi, and before the end of this year a connection will be completed through Yubari to Mororan, an excellent harbour, which can be entered at all seasons of the year. Even with the comparatively poor harbour of Ōtaru the annual export is considerable. Yezo coal is already largely used on the railways, at manufactories, and on steamships, and there is no doubt that its influence on Eastern commerce is rapidly increasing. Every year the various foreign fleets in these waters are coaled at Yokohama, Hakodate, and the other treaty ports, whilst Japanese coal has for many years been profitably sold in the markets of Hong Kong and Shanghai. When last at Sorachi, in 1891, 800 men were employed, and the output was 300 tons per day. The output for 1892 is expected to reach 150,000 tons. In my opinion there is not the slightest reason why it should not amount to 1000 tons per day, similar quantities coming from Poronai and Yubari also. This means that, *should it be required*, 3000 tons per day may be laid down at Mororan; and this place, it is hoped, may become one of the most important coaling stations for trans-Pacific traffic. The coal from all the seams varies, that from Yubari being best for gas and coke. Besides the three mines mentioned, there are many others. The first explorer of the Yezo coalfields was Mr. B. S. Lyman, who, after many tedious surveys, concluded that there were over 150,000,000,000 tons of workable coal in Yezo. Although writers on Yezo have hesitated in accepting Mr. Lyman's statements for such surveys as were made, his estimates appear to be under rather than over the mark.

Sulphur.—Next in importance to coal of the mineral productions of Yezo comes sulphur. A Consular Report for 1889 tells us that 14,421 tons, valued at £34,267 9s. 10d., passed through the port of Hakodate during that year; but as all shipments from Hokkaido do not necessarily pass through that port, it is difficult to determine the total quantity of any particular article of export.

Copper exists at many mines, especially in the peninsula between Iwanai and Ōtaru; but none has as yet been profitably worked.

Lead and Silver are found in still smaller quantities.

Gold.—For many years great hopes were entertained respecting the auriferous gravels. They have certainly given a maximum yield of 6·13 *sen* per cubic yard; and inasmuch as a yield of 3 to 4 cents per cubic yard has paid in California, where wages are, to wages in Japan, in the ratio of at least 4 to 1, it might be concluded that working the Yezo goldfields ought to be a profitable enterprise. My own opinion is, that because the Yezo gold is not only extremely fine, but micaceous in character, the 6 *sen* per cubic yard can only be extracted by most careful manipulation, and therefore, until deposits of a character different to those hitherto exploited are met with—and there is no reason to suppose their non-existence—Yezo will not be a gold-producing country.

Petroleum is met with in limited quantities.

Magnetic Iron Sands are found in thin layers on many of the shores.

Diatomaceous Earth, which, according to Mr. N. Jimbo, is of Miocene age forms hills.

In reading these notes on the minerals of Yezo, it must be remembered that the country is as yet practically one vast forest, and its future as a metal-producing country is consequently unknown. From the little that is known, however, there is a fair prospect of it at least rivalling the main island.

ANIMALS FOUND IN YEZO.

I.—Mammals.

Bears.—Two species apparently occur, both of which are different to the bear of the main island (*Ursus japonicus*, a Himalayan type). One of the Yezo bears may be identical with the Grizzly (*U. ferox*); but the other, which attains an enormous size, may be a new species. Both have black claws. They are fairly numerous, but on account of the density of the undergrowth it is almost impossible to meet with them during the summer months. During the winter the Ainu kill a fair number. At Yubets, a small village where there are, say, about a dozen or fifteen men, some thirty skins are obtained every season. The Yezo bears extend to the large islands of Kunashiri and Eturup, but are not found on the almost equally large island of Urup; nor are these animals again met with on the Kuril group until we reach Paramushir, a large island near Kamchatka, where bears in certain localities are so plentiful that Mr. H. J. Snow has met with as many as nineteen in a single morning's hunting. The bears of Paramushir and Shumshu are not the same as those found in Yezo, but belong to the Kamchatka species, of which there are said to be two kinds—one black and the other brown.

Wolf (*C. hodophylax*).—This is somewhat rare; it occurs on Kunashiri and Eturup, as well as in Yezo. It has usually a grizzly, brown coat; the lighter red variety is regarded by the Japanese as a distinct species, and is called by them *Yama-inu* (mountain dog).

Fox (*C. vulpes*).—Foxes are fairly numerous. The red variety is the most common, but the cross and silver-grey are also found; and black foxes are reported as having been seen on some of the Central Kuriles. Mr. E. Dun, who lived several years in Yezo, assures me that in winter it is not uncommon to obtain a white fox.

Deer (*C. sika*).—At one time these animals were so plentiful that the Government established at Bibi a factory for canning venison; but during the severe winter of 1874–5, so many deer came down to the coast, where they were slaughtered simply for their skins, that they became comparatively scarce. The killing of deer after this was interdicted, and in consequence, in the Tokachi Mountains and Teshio Valley their number is said to be increasing.

Otters (*L. vulgaris*, or *L. Whitelyi*).—The river otter is common in Yezo, and on some of the Kuril Islands.—The *Sea Otter* (*Enhydra marina*) was at one time numerous on the Kuril Islands, a stray one now and then being obtained on the extreme eastern part of Yezo. This valuable animal, however, is becoming rare. Twelve years ago it was not an unusual thing for hunters to meet with "schools" of twenty to forty of these creatures lying in the kelp. Now they are so scarce that a vessel hunting with three boats off the Kuril Islands for seven months (April to October) will not secure a catch of more than twenty-five or thirty skins. At the yearly public auction sales of sea-otter skins in London, which took place in March, 1891, exceptionally fine pelts realised as much as £200 each.

Seals.—Dr. Fritze mentions *Phoca equestris*, *Otaria ursina*, and *O. stelleri*. Mr. H. J. Snow informs me that the former of these three species has not been seen by him, and the two latter respectively correspond to the fur seal and sea-lion. —The *Leopard Seal* (*Phoca vitulina*) is found around Yezo and all the Kuriles.—The *Fur Seals* (*Callorhinus ursinus*) have, or rather had (for they have been all but exterminated by indiscriminate slaughter on the rookeries), three haunts on the Kuril Islands, breeding rookeries existing on the Srednoy Rocks, Raikoke Island, and the Mushir Rocks.—The *Sea-lion* (*Eumetopias stelleri*) is found in large numbers, there being one or more breeding rookeries on nearly all the islands.—The *Black Sea-lion* (probably *Zalophus Gillespii*) is also found frequenting the Kuriles in limited numbers.—The *Walrus* (*Rosmarus obesus*) does not frequent any part of Japanese possessions, but a sick animal was captured in the Tsugaru Strait, near Hakodate, some years ago. They seldom stray beyond the southern part of Kamchatka.

Hare (*L. brachyurus*).—This hare is fairly common, and is of great size. It is found on Kunashiri and Eturup. Professor Ijima, who has often shot these hares in the main island, is of opinion that the animal which turns white in winter is *L. variabilis*, and not *L. brachyurus*. Both are found on the main island.

Squirrels.—In the woods I have only seen three varieties—a small striped ground squirrel, like a chipmunk (*Tamai striatus* or *Asiaticus*), a squirrel with tufted ears (*Sciurus lis*), and a large red one (*Pteromys monnonga*). In the museum at Sapporo there is a flying squirrel (*Pteromys leucogenys*), said to belong to Yezo. Dr. Fritze is of the opinion, which I share, that it does not exist in Yezo. Wallace mentions three squirrels for Japan.

Badger (*M. anakuma* (?)).—One species, known to the Japanese as "Mujina," or "Sasa-kuma."

Racoon (*Nycterrheutes viverrinus*).—The "Tanuki," or dog-faced racoon of the main island.

Weasels.—An animal known to the Japanese as "Shiroi itachi" is fairly common. Another, but larger member of the *Mustelidæ*, is a marten (Japanese "ten"). Dr. Fritze enumerates *Mustela itachi* (or *M. Sibericus*), *M. brachyura*, *M. melanopus*, and *M. vulgaris* as being found in Yezo and the main island. The latter, which may be identical with *M. japonica*, is considered by Dr. Fritze as the same as the European weasel.

Dormouse (*Myoxus elegans*, or *M. japonicus*).—Yezo (?).

Rats.—There are two species, one of which is some 15 or 16 inches in length from nose to tip of tail. The common house-rat is smaller.

Shrew (?) (*Sorex asinegumi*), also found on main island. Wallace mentions three other examples of the genus *Sorex* as belonging to Japan.

Moles.—Dr. Fritze mentions "Talpa mogura," which also occurs in the main island. The "Yama mogusa" (*Urotrichus talpoides*) is found only in the main island, and on the north-west coast of America.

Boar (*Sus leomystax*).—Yezo (?). Mr. E. Dun, who resided for ten years in Yezo, holds the opinion, based on reports of Ainu hunters, that a few wild pigs exist in Yezo. There is certainly a specimen in the Hakodate museum.

Bats.—Although some travellers omit to mention the existence of bats in Yezo, in the southern part of the island they are fairly common. In the Sapporo museum there is a black bat and a small brown one. Prof. Ijima, although believing that the common bats in Tokio (*Vesperugo noctula* and *Vesperugo alrumvs*), exist in Yezo, the only two species authentically recorded from there are *Plecocotus auritus* (brown, with very large ears), and *Rhinolophus ferrum-equinum* (brown, with complicated nose).

Amphibia.

Frogs.—I have only noticed two kinds of frogs in Yezo. Dr. Fritze mentions *Hyla arborea*, *Rana esculenta*, *R. rugosa*, and *Bufo vulgaris*. *Hyla burgesi* may possibly occur in Yezo.

Salamander.—One small salamander (*Triton suberistatus* (?)) is found in Yezo. From its Japanese name, "Hakone-san-sho-rio," it might be identical with one of the species found in the main island. Four other members of this group, including the Great Salamander, are found only on the main island.

Lizards.—One extremely pretty lizard, called "Tokagi" (*Lacerta tachydromiides*), about two inches in length, is said to be peculiar to Yezo. In colour it is brown, covered with five longitudinal white stripes. "Aoto Kage" (*Eumeces quinquilineatus*), and the common green lizard are both found in Yezo.

Snakes.—In the southern part of Yezo snakes are comparatively rare, but on the north coast, and in the mountains, even where it is dry, they are in places quite common. I have only met with three species; but in the Sapporo museum there are seven, as follows:—"Awo daisho" (*Elaphis virgata*); "Mamushi" (*Trigonocephalus Blomhoffi*), a poisonous viper; "Shima namera" (*Elaphis quadrivirgata*), a striped snake; "Kuroi hebi" (*Elaphis quadrivirgata*, black variety), a black snake; "Aka hebi," a small red snake; "Iwa hebi," a small whitish snake; "Tsuchi moguri" (literally, ground creeper). There is also a black snake with whitish spots. The first three certainly occur on the main island. Dr. Fritze says that *Tropidonotus tigrinus*, *T. Martensii*, and *Coluber conspicillatus* were not obtained by him in Yezo; but it is possible they may occur. I am of opinion that the first, a red striped-snake, is certainly to be found.

Birds.

As Wallace remarks, in the opening chapter of his 'Island Life,' the birds of northern Japan have so close a resemblance to those of Great Britain, that it requires a practised ornithologist to tell the difference. Some forty species are absolutely identical.

In Japan, according to Blakiston and Pryer, who have done as much, if not more, for the ornithology of Japan, and especially Yezo, as has been accomplished for any other department of the zoology of this country, there are altogether 351 species, and of these 217 are found in Yezo. Of the Yezo and Kuril Island birds there are 59 which do not cross to the main island, or have hitherto not been obtained there; whilst of those found on the main and southern islands there are 75 species which are not found in Yezo.

Seebohm, in his 'Birds of the Japanese Empire,' gives 381 species. Professor Ijima, in a list just published, enumerates over 400 species. The Avifauna of Yezo is, however, only increased since Blakiston's time by one species—*Emberiza leucocephala*.

My own observations on the Avifauna of Yezo are so extremely limited that they have been included in the notes of travel.

Around the coasts, gulls, divers, and cormorants are numerous. Where there is open grass-land, as, for instance, near Nemuro, skylarks are so numerous that they are netted for food. In the woods, especially on the western side, a cuckoo (*C. canarus*) is continually heard. In the marshes, at certain seasons, snipe are extremely plentiful; whilst the ponds, lagoons, and river mouths, particularly at the approach of winter, are covered with a variety of ducks and geese, and occa-

sionally swans. The mallard breeds in Yezo. The actual forests are practically lifeless. On the western side of the central range of mountains a few hazel grouse (*Tetrastes bonasia*) are met with; but on the eastern side it is seldom that a bird is either seen or heard.

Fishes.

The most remarkable development of animal life in Yezo and the Kurils is found in the rivers and surrounding ocean.

The Japanese are a nation of fishermen, and until recent years the only attraction that Yezo presented to them was its fish. Even now a large proportion of the population of Yezo is composed of fishermen, many of whom come from the main island in spring, and spend the summer and autumn in taking salmon, herrings, "Iwashi," and other fish, returning to their homes for the winter.

In 1891 the migration extended as far as Urup, the third of the Kuril Islands. There is a salmon-tinning establishment at Bekkai, on the north coast, and another on the west side of the Island of Eturup.

When the winter snows have melted off the hills, and the temperature of the river water has fallen to about 50° Fahr., the "Masu," or spring salmon (*Oncorhyncus Perryi* and *O. Jessoensis*), enter the river mouths, and commence their ascent inland.

In Southern Yezo the "run" in the rivers—at which time fly-fishers can obtain fair sport amongst five to eight-pound fish—takes place about the middle of June. In the north it is two or three weeks later.

At this time many of the streams are too small to hold the fish that endeavour to ascend. On Eturup I have rowed ashore through a mixture of fish and water, the blades of the oars striking the backs of fish at every stroke. In the pools of the streams there were seething masses of salmon, and I have seen five killed by a single shot from a rifle. In the shallows, as the fish struggle upwards, thousands may be killed in a very short space of time simply with a club. The shores are strewn with dead and dying fish, that have run themselves on shore and failed to get back to their natural element. Bears at this season have an *embarras de richesse* of food, and this is the time when the hunter may often get a shot.

The Japanese, with nets along the shore, obtain prodigious hauls. The fish are gutted, a handful of salt thrown inside, and then stacked in bulk in "godowns" to await shipment.

Prior to the "run" of "Masu," the fishermen are engaged along certain sections of the coast in the herring fishery. These fish are boiled down and pressed for oil, the refuse being dried and exported to Southern Japan as fish-manure, called "Kasu."

After the "Masu" have ceased to "run," in the fall a larger salmon, averaging, say, 20 lbs., is taken. This is the "Shaké" (*Oncorhyncus haberi*).

Besides these fish, especially in the colder waters of the north, cod and halibut are taken; but attention is almost entirely directed to the salmon, herring, and a sardine-like fish called "Iwashi."

At present Japanese fish are taken solely for Japanese consumption, their method of semi-curing not giving a result that is palatable to any but themselves.

Enterprise, capital, and improvements in methods of preserving, ought certainly to lead to the development of an enormous export industry; and rather than herrings, "Iwashi," and other fish being converted into manure, they might supply Catholic Manila and China with food.

Insects.

Insect life in Yezo is fairly well represented. Dr. Adolf Fritze, our latest collector, says that the tropical and sub-tropical forms of the main island occur, but in

fewer numbers and species. In their place we find northern forms less in size and darker in colour.

The variations in a type as represented in the south and in the north of the empire have been well illustrated by Mr. George Lewis, in his paper on the Coleopterus, genus *Damaster* ('Trans. Asiatic Soc. of Japan,' vol. ix.).

The travellers' pests are the mosquito ("Ka"), the black-fly ("Buyu"), a gad-fly ("Abu"), and a minute and exceedingly poisonous sand-fly ("Nuka"). The latter leaves marks lasting for two weeks.

Some years ago the farmers in the southern part of Yezo suffered from invasions of locusts, which, in spite of trenches cut to catch the larvæ, the firing of guns, beating of drums, &c., and lighting of fires, succeeded in partially destroying the crops. Fortunately, this pest has now disappeared.

Although at the request of friends I have often collected specimens of Neuroptera, Lepidoptera, and other insects when travelling in Hokkaido, my entomological knowledge is too small to permit my venturing on more than the above few generalities.

In conclusion to these remarks upon the zoology of Yezo, a small river crab (*Astracus Japonicus*) must be mentioned on account of its geological interest. It is common in many streams, and their banks, like the lower water of the Toyohira, are so thickly perforated by its borings that it cannot fail but accelerate the action of the river in the destruction of its banks.

ANTHROPOLOGICAL NOTES.

SHORTLY after my arrival in Japan I devoted considerable attention to the exploration of kitchen middens or shell-heaps, pit-dwellings, and the perusal of ancient documents relating to the aborigines; and several communications were made to societies detailing the results. Much of the information was derived from Yezo. The results obtained, which have been confirmed by subsequent investigations, are, I consider, sufficiently important to be epitomised.

To commence with, according to the researches of Prof. B. H. Chamberlain and other investigators of early Japanese history, the first authentic date is A.D. 461, and "even the annals of the sixth century must be received with caution." Up to the end of the twelfth century we read how the Japanese in the main island warred against the aborigines, and some monuments testifying to these struggles are still existing.

Place names and family names of Ainu origin are common throughout Japan, and Prof. Chamberlain has written specially on this subject. Ancient kitchen middens are numerous, and along with shells, fragments of the bones of animals, pottery, and stone implements, we find human bones (as, for instance, *Platycenemic tibiæ*), which are, so far as I can learn, peculiar to the Ainu. The pottery found on the main island is in all respects similar to that found under similar conditions in Yezo.

In Yezo, kitchen middens are common, and from their structure, the nature of their contents, and the historical evidence that the Ainu once knew the art of pot-making, and used stone implements, it may be concluded that they are of Ainu origin.

At Sapporo, Mororan, Kushiro, and on many of the Kuril Islands, there are the excavations of pit-dwellers. These are said to be remains of the "Koropokkuru" of

the Ainu, who state that they fought with these people and exterminated them. In Eturup I have seen hundreds of these pits, and in Shumshu, the most northern of the Kuriles, I saw the so-called Kurilsky dwelling in such pits.

These people, of whom there are about sixty remaining, have been gathered together and placed by the Japanese Government authorities on the outlying island of Shikotan, at the southernmost extremity of the Kuriles.

The conclusion is, that the Japanese, advancing from the south, to a limited extent mixed with the Ainu, as they do at the present day, and at the same time drove them northwards; the Ainu in turn pressed upon the "Koropokguru," the remnants of whom may possibly be represented by the Kurilsky.

In 1886 the Ainu in Yezo numbered 14,400. There are also a number in Saghalin. There are reasons for believing that at one time the Ainu formed an extensive and mighty nation, of which there only remains the selvedges. The Kurilsky, whatever they may have been, are nearly extinct.

YEZO—GENERAL NOTES.

Inasmuch as Japanese civilisation advanced from the south towards the north, it is but natural that the northern island, which is officially known as Hokkaido, should have been one of the last parts of the empire to receive attention.

In the seventeenth century the Shogun, Ieyasu, placed the island under the charge of the Daimiyo Matsumai Yoshihiro, who built a castle and established a capital at Matsumai, or Fukuyama. From this time on, Yezo became a land for fishermen, who eventually penetrated to Saghalin and the southern Kuriles, and the Ainu aborigines were forced to regard the Japanese as conquerors.

The Shogunate, however, did not appear to have given strict attention to its gradually acquired possessions until about 1869, when it was alarmingly evident that Russia was advancing from the north.

A Russian church and village existed on Urup, and others had been built on some of the islands to the northward. Saghalin was well occupied, and a Russian church and Consulate were established in Hakodate. To stem this northern tide, the Government in Tokio recognised that Yezo must receive further attention, and be populated.

Definite limitations of territory were arrived at by Japan accepting the more or less barren Kuriles to the north of Eturup, in exchange for the southern part of Saghalin, an exchange that was anything but beneficial to those Japanese who had established fishing stations on the latter island, and which is yet referred to from time to time with bitterness by the Japanese press.

In 1869 a Colonisation Department, called "Kaitakushi," was established; a clearing was made in the woods, the official capital, Sapporo, built, and General Capron, with a staff of foreign *employés*, engaged to assist in the development of the country.

In 1882 the "Kaitakushi" was dissolved, the government of the island being incorporated as three prefectures with that of the main island. This lasted until 1886, when a further change in administration took place; the "Kens" were abolished, and a military governor-general appointed, under the control of the War Office for military affairs; and the Home Office for civil affairs; and this is the system under which Yezo is at present governed.

Altogether, recent developments in Hokkaido have cost the Imperial Govern-

ment some 30,000,000 dollars; and although writers on Yezo have spoken of the prosperity achieved as "fictitious," and the dissolution of the "Kaitakushi" as the bursting of a bubble, my own opinion is, that in the main the money has been well employed.

Since 1875, in my own time, I have seen the population of Hakodate increase from 10,000 to nearly 60,000, villages grow into towns, and towns spring up where formerly there were primeval forests.

In 1869 the population of Yezo was 49,000; in 1886 it was 226,000.

Many of the inhabitants were brought to the island by assistance from the Colonisation Department, and a large number of them, say 2000, are farmer-soldiers ("Tonden hei"). These latter, with their families, are settled in six localities. In 1877, at the time of the Satsuma rebellion, they were in active service.

One hundred and ninety-six miles of railway are nearly completed, roads have been constructed, farms of various descriptions established, coal mines opened, canning establishments, hemp, and other mills started, and fisheries encouraged.

In the endeavours to make an accurate trigonometrical survey of the island, to establish sugar factories, and some other things, money may have been squandered, and there is no doubt that most of the Government undertakings have been unprofitable; still, the fact remains, that largely, if not almost entirely, owing to the Government's assistance, Yezo is becoming populous and self-supporting. The towns have a better appearance than many of those on the main island, and the inhabitants are comparatively rich.

Taking the trade of Hakodate (which may be looked upon as a gauge of the prosperity of the island), for 1890, we find—

Exports :—			
Foreign trade . .	£129,315	Domestic trade .	£1,017,742
Imports :—			
Foreign trade . .	109,936	Domestic trade .	1,016,044
	£239,251		£2,033,786

In 1874 these were :—

Exports :—			
Foreign trade . .	£63,227	Domestic trade . .	£7,819
Imports :—			
Foreign trade . .	4,003	Domestic trade . .	10,727
	£67,230		£18,546

The chief articles of export are, fish-manures, sea-weed, various marine products, sulphur, and coal. The principal import is rice. At one or two places attempts have been made to cultivate this article of food so indispensable to Japanese, but they have generally resulted in barely covering expenses of production.

With the above figures, which have been obtained from Consular reports, before us, and the fact that the population, with the stimulus of Government support, has increased during the last few years nearly fourfold, whatever views may be held with regard to Government expenditure, it is certain that Yezo is rapidly assuming a position of considerable commercial importance.

BOTANICAL NOTES.

Botanists who have written on the flora of Japan are many, but those who have actually worked in Yezo are few. Mr. Louis Boehmer, who for some years resided in Sapporo as Government Horticulturist, wrote a report for the Government on his journey round the island. Mr. Charles Maries collected conifers and other botanical specimens for Mr. Veitch; and lately Dr. Heinrich Mayr spent some months in the forests of Yezo, chiefly devoting his attention to the conifers.

I have no pretension to any botanical knowledge, but having travelled so often in the country, and from time to time collected plants for friends, I venture to express an opinion on those which I regard as peculiar or common.

The aspect of the flora of Yezo to the ordinary traveller is strikingly different from that of the main island. Instead of meeting groves of bamboo, cryptomeria, and plants with a semi-tropical appearance, oak, elm, birch, and other trees familiar to every Englishman, are common. Round Sapporo, rather than the interminable paddy of the main island, we find meadows of well-known grasses, and fields of barley and other cereals. One of the most striking features is the enormous size attained by certain familiar-looking plants. During the last summer I rode by the side of—or, I may say, beneath—thistles over 14 feet in height; whilst the coltsfoot, or rhubarb-like looking "Fuki" (*Petasites Japonica*, or *P. gigantea*), is abnormal. On shady slopes circular leaves 4 feet in diameter are common. Capt. Blakiston, in his 'Japan in Yezo,' mentions a leaf 6 feet in diameter; and in the island of Urup, my friend, Mr. N. Fukushi, measured a leaf 7 feet in diameter, which was carried on a stem 12 feet high, and 2½ inches in diameter. Leaves like these, although in an island which during the winter is surrounded by a frozen ocean, rank amongst the largest known in the vegetable world.

Forest Trees and Shrubs of Yezo.

The following list of forest trees and shrubs found in Yezo, with notes on their uses, is a translation of a Government report ('Hokkaido Jumoku-shirio'), published in 1889 by Mr. Sugiyama Kiotoshi for the information of the Forestry Department. The list is reproduced partly because translations from Japanese are not easily accessible to Europeans, partly because it is a recent publication, and partly because it may be of use in connection with the trees and shrubs mentioned in my notes of travel. Here and there, with the assistance of Mr. Fukushi, I have added a few remarks respecting distribution, comparative frequency of certain species, &c. The trees which have attracted the greatest attention have been the conifers; and for Japan, Dr. M. T. Masters enumerates 41 species, 22 of which are regarded as endemic. For Yezo, 8 species are given, and all of these are found on the main island. In the Kuriles there are two species, *Pinus Cembra* and *Picea obovata*, which are not found in Yezo or on the main island.*

Abbreviations and Equivalents.

Sieb. et Zucc.	=	Siebold et Zuccarini.
D. C.	=	De Candolle.
Bail.	=	Baillon.
Planch.	=	Planchon.

* 'On the Conifers of Japan.' By M. T. Masters, M.D., F.R.S. (*Journal of the Linnean Society*, vol. xviii., p. 473.)

Mig. . . . . = Miguel.
Max. . . . . = Maximowicz.
Rupr. . . . . = Ruprecht.
Thunb. . . . . = Thunberg.
Fr. Schm. . . . . = Schmidt.
Fr. et Sav. . . . . = Franchet et Savatier.
L. . . . . = Linnæus.
Bl. . . . . = Blume.
Turcz. . . . . = Turczaninow.
Benth. et Hook. . . = Bentham et Hooker.
Lindl. . . . . = Lindley.
Reg. . . . . = Regel.
Pall. . . . . = Pallas.
Scop. . . . . = Scopoli.
Torr. et Gray . . . = Torrey et Gray.
Gaertn. . . . . = Gaertner.
Sm. . . . . = Smith.
Dietr. . . . . = Dietrich.
Roxb. . . . . = Roxburgh.
Wall. . . . . = Wallich.
Hook. f. et Thoms. . = Hooker filius et Thomson.
Lam. . . . . = Lamark.
Traut. . . . . = Trautvetter.
Pers. . . . . = Persoon, C. H.
Cham. . . . . = Champion.
Nutt. . . . . = Nuttall.
Wild. . . . . = Wildenow.
Ait. . . . . = Aiton.
Anders. . . . . = Anderson.

Other authorities are quoted in full.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
1	Cercidiphyllum Japonicum (Sieb. et Zucc.) = Katsura.	Building (houses, boats); drawing-boards; furniture; making a dye. On a certain festival, the Matsuri of Kamo, the leaves are used as decorations. It is a large tree. Common, and from a distance not unlike the Echo (*Salisburia adiantifolia*), for which it has been mistaken. See Miss Bird's 'Unbeaten Tracks in Japan.'
2	Cercidiphyllum Japonicum (Sieb. et Zucc.) var. ? = Higatsura.	Cut into boards. Used when large slabs are required. Rare.
3	Magnolia hypolcuca (Sieb. et Zucc.) = Hōnoki.	Boards; sheaths for knives; shafts for waggons; cheap stamps or seals. As a garden plant. Because the bud is like a Japanese brush or pen, it is called the "tree-brush." Common.
4	Magnolia kobus (D. C.) = Hikigakura.	Posts; shafts for waggons; small articles. As a tree for gardens. The flowers used as medicine. Common.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
5	Schizandra clunensis (Bail.) = Matsubusa.	A vine-like plant. The nut is eatable.
6	Berberis vulgaris (L.) = Tori-to-marazu.	A bush. Yellow dye is made from roots and shoots. The thorns are poisonous.
7	Actinidia arguta (Planch.) = Nikiyō.	A common vine. Thick stems used as ornamental columns, for small trays, teapots, &c. Thin stems for walking-sticks, or in the place of ropes at ferries. Fruit is eatable and good for stomach-ache. A liquor is brewed from it, and a kind of jam made. In the mountains where there is no water travellers drink the sap.
8	Actinidia polygama (Planch.) = Matatabe.	A vine somewhat rare. Thin stems may be used as a substitute for rope. Paper made from bark. Young leaves are edible with vinegar and "Miso" (a bean extract). The taste is hot. The fruit, which is also edible, may be dried or salted. It has a gooseberry-like taste, but the skin may hurt the lips. Cats are extremely fond of the snuff-like powder made from the dried leaves. It is said that if the plant is burned the smell will attract cats from a long distance.
9	Stachyurus praecox. (Sieb. et Zucc.) = Iwashiba.	A bush.
10	Tilia cordata (Mill.), var. Japonica = Shina-no-ki.	Used as planks, and making furniture. Inner bark used for rope. Various kinds of paper and rough cloth made from it. It is also used to make mosquito-nets, and a kind of cloth used in filtering, called "Mada-nuno." Common.
11	Tilia miqueliana (Max.) = Obashina.	The uses are the same as for No. 10, but it is inferior. Rare.
12	Zanthoxylum piperitum (D. C.) = San-shyō.	From the wood boxes are made. Young leaves may be eaten. The bark has got a hot taste; but when cooked it is sweet; it is then called "Kara Kawa." The bark mixed with charcoal ash is sometimes thrown into streams to kill fish. The seeds are used as a spice, which is eaten after eating eels. Rare.
13	Phellodendron amurense (Rupr.) = Shikoro.	Used as a building material; for making boxes and cups. The inner bark yields a dye, and is used as a medicine = Ōbiyaku of the Chinese doctors. The outer bark can be used for making corks. In some places it is used for making floats for nets. The Kiso Mountains yield good Ōbiyaku.
14	Skimmia Japonica (Thunb.) = Yama-shikimi.	A bush. Used in paper-making. Flowers yield a perfume.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
15	Picrasma ailanthoides (Planch.) = Nigaki.	Used for making boxes, carts, farming tools, &c. It yields a dye, and a medicine which causes vomiting. The Ainu make hoops from the bark, carve on it, and some of the women make neck-bands from it.
16	Ilex crenata (Thunb.) = Inutsuge	Used as an ornamental bush in gardens; also for handles for tools; in making combs and seals.
17	Ilex sugeroki (Max.) = Akamino-inutsuge.	Uses like No. 16. A bush.
18	Ilex integra (Thunb.), var. Leucoclada (Max.) = Hime-mochi.	A bush used in gardens.
19	Ilex rugosa (Fr. Schm.) = Tsuru-tsuge.	A bush used in gardens. The Ainu obtain from it a medicine for toothache.
20	Ilex macropoda (Mig.) = Kosa-buna.	Common in the southern part of Yezo.
21	Euonymus alatus (Thunb.) = Yawadzueri-maki.	A bush. Used for wooden nails, and planted in gardens.
22	Euonymus alatus (Thunb.), var. subtriflora (Fr. et Sav.) = Hime erimaki.	A bush. Used for walking-sticks, making wooden nails, and as an ornamental shrub.
23	Euonymus Europæus (L.), var. Hamilitonianus (Max.) = Inu erimaki.	A garden plant.
24	Euonymus oxyphyllus (Mig.) = Erimaki.	Used in ornamental furniture, and for making bows, stamps, and combs.
25	Euonymus sachalinensis (Max.) = Ōtsuri-bana.	Used as a garden plant.
26	Euonymus Japonicus (Thunb.), var. radicans (Mig.) = Tsuru masaki.	A vine-like plant used in gardens.
27	Celastrus articulata (Thunb.) = Yama gaki.	A vine-like plant. Wood used for small articles. Inner bark is white, and fibres long. The Ainu use it for fishing lines. It might be used for paper.
28	Rhamnus Japonicus (Max.) = Kuro-mame modoki.	Used for small work. The leaves are bitter and poisonous. A bush.
29	Vitis labrusca (L.) = Budo . .	The common vine, which not only climbs tall trees, but in places makes almost impenetrable tangles. The fruit is eatable, and can be used for making wine. The runners used as rope.
30	Æsculus turbinata (Bl.) = [illegible]ochi-no-ki.	A common tree. The wood is used for various purposes. The bark of the twigs may be used in place of quinine. From the nut starch or dough may be made.
31	Acer spicatum (L.), var. Ukurunduense (Max.) = Hozaki-kayede.	Used for wood and charcoal. An ornamental tree.
32	Acer capillipes (Max.) = Mine kayede.	Used for wood and charcoal.
33	Acer Japonicum (Thunb.) = Oba hana itaya.	Somewhat rare. Used for posts in houses, boxes, gun-stocks. The Ainu use it for sheaths of knives.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
34	Acer palmatum (Thunb.) = Hana itaya.	Same as No. 33. It is, however, more common.
35	Acer pictum (Thunb.) = Itaya .	Common. Used for posts in houses, sheath and handles for knives, &c. It is used as wood and charcoal. Sugar may be made from the juice, which is collected in February and March.
36	Acer miyabei (Max.) = Kurobi itaya.	Same as No. 35.
37	Acer tataricum (L.), var. Ginnala (Max.) = Yachi itaya.	Used for boxes, furniture, &c. The bark used for paper and for starch-making. Rare.
38	Acer cissifolium (C. Koch) = Mitsuba kayede.	Used for wood and charcoal. Common in Tokachi and Urakawa.
39	Staphyea bumalda (Sieb. et Zucc.) = Hashi noki.	A garden plant.
40	Rhus semi-alata (Murr.), var. Osbeckii (D. C.) = Gomagi.	The nut is used in chemical works and dyeing.
41	Rhus trichocarpa (Mig.) = Yama-urushi.	A shrub. Boxes, &c., made from it. Leaves used as a dye.
42	Rhus toxicodendron (L.), var. Radicans (Mig.) = Tsuta-urushi.	Leaves poisonous. Used as a medicine. Sometimes planted in gardens. Common.
43	Coriaria Japonica (A. Gray) = Doku-utsugi.	A bush. Leaves collected in the hottest part of summer, and used as a dye. The fruit and leaves poisonous. Used to kill rats, and therefore called "Nezumi Koroshi," or rat-killer.
44	Lespedeza bicolor (Turez) = Hagi	Common shrub. Hedges made from it. The twigs used in floral decorations.
45	Cladrastris amurensis (Benth. et Hook.), var. Floribunda (Max.) = Enju.	Used for posts in a house, making trays, axe-handles. It yields a dye. Sometimes planted in streets.
46	Prunus pseudo-cerasus (Lindl.) = Sakura.	Cherry-wood. Used in making wood blocks for engraving, rulers, bowls, &c.
47	Prunus Maximowiczii (Rupr.) = Shiro zakura.	Used to make small articles; also for making the best charcoal.
48	Prunus Ssiori (Fr. Schm.) = Shiuri.	A tough wood, used for oars. Rare.
49	Prunus Padus (L.) = Kabazakuri.	Like No. 48. Rare.
50	Spiraea media (Schmidt), var. Sericea (Reg.) = Shimo fieri bana.	An ornamental bush, planted in gardens.
51	Spiraea betulifolia (Pall.) = Miyama, shimo furi bana.	A pretty shrub, planted in pots.
52	Spiraea chamae dryfolia (L.), var. Ulmifolia (Scop.) = Obe shimo furi bana.	A garden plant.
53	Spiraea salicifolia (L.), var. Lanceolata (Torr. et Gray) = Ezohagi.	A pretty shrub for the garden.
54	Spiraea sorbifolia (L.), = Ho-zaki-nana-kamado.	A garden shrub.
55	Rubus crataegefolius (Bunge) = Ki-ichigo.	The fruit is edible.
56	Rubus phaenicolasias (Max.) = Kuma-ichigo.	Fruit edible. The stems have red hairy thorns, which from their appearance are called "Yebi-gara," or lobster-shell.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
57	Rubus parvifolius (L.) = Tsuru-ichigo.	Fruit edible.
58	Rosa multiflora (Thunb.), var. Adenophora (Fr. et Sav.) = Ya-shyo-bi.	As a garden plant, and for hedges.
59	Rosa rugosa (Thunb.) = Hama nasu.	Flowers beautiful. Fruit edible. Used as a medicine and as a dye.
60	Rosa acicularis (Lindl.) = Ko-hama-nasu.	A garden plant.
61	Pyrus Toringo (Sieb.), var. Incisa (Fr. et Sav.) = Zumi.	
62	Pyrus alnifolia (Koch) = Kata-sugi.	Used for furniture making, and for charcoal.
63	Pyrus aucuparia (Gaertn.) = Nana-kamado.	Used for making small articles, wooden hammers, charcoal, &c.
64	Crataegus chlorosarca (Max.) = Yachi-zakura.	Used for small articles.
65	Photinia villosa (D. C.) = Kama-tsuka.	The fruit is edible. Used for making nosepieces for oxen.
66	Hydrangea paniculata (Sieb.) = Sabita.	Used for small work, like wooden nails. Starch is obtained from inner bark. It is also used in making a perfume for hair-oil. Common.
67	Hydrangea Thunbergii (Sieb.) = Sawa-ajisai.	A garden plant. The leaves are sweet, and are used in making a certain drink.
68	Hydrangea petiolaris (Sieb. et Zucc.), var. Cordifolia (Max.) = Tsuru-ajisai.	On account of flowers it is used in gardens. The bruised tendrils are very sweet. Common.
69	Schizophragma hydrangevides (Sieb. et Zucc.) = Uchiwa guru.	A garden plant. Common.
70	Ribes petracum (Wulf), var. Tomentosan (Max.) = Ya-maka-aranto.	A bush. Fruit edible.
71	Hamamelis Japonic. (Sieb. et Zucc.) = Mansaker.	A garden plant.
72	Aralia spinosa (L.), var. Canescens (Fr. et Sav.) = Taran bosen.	Used for making clogs, boxes, &c. The pith is made into toys, called "Shichiu-Ka." These are small spills, which, when placed in water, expand to a relatively very large size, and float about in the form of flowers, fish, &c., into which the pith had been previously cut. The plant is also known as "Tsuno-otoshi," or "Horn-dropper," because when new leaves appear, which are eaten by deer, they lose their horns. Common.
73	Acanthopanax ricinifolium (Sieb. et Zucc.) = Onisen.	Used for building, making boats, spars, rods, &c. Young leaves edible. Common.
74	Acanthopanax ricinifolium (Sieb. et Zucc.), var. (?) = Nukasen.	Remarks like No. 73. Common.
75	Acanthopanax sciadophylloides (Fr. et Sav) = Aburako.	Used for boxes, clogs, furniture. Young leaves edible.
76	Acanthopanax divaricatum (Sieb. et Zucc.) = Oniuko-gi.	A bush.
77	Fatsia norrida (Sm.) = Kumadara	A bush.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
78	Helwingia Japonica (Dietr.) = Hana ikata.	A shrub. Large stems used in furniture, but Mr. Sugeyama remarks that he never found one. A garden plant.
79	Marlea begoniaefolia (Roxb.) .	Tool handles. A garden plant.
80	Cornus macrophylla (Wall.) = Mizuki.	Handles for tools. Making toothpicks and tooth-brushes. Bark of twigs and roots used for medicine.
81	Aucuba Japonica (Thunb.) . .	A garden plant.
82	Sambucus racemosa (L.), var. Sieboldiana (Mig.) = Kobu no ki.	Used for making furniture, boxes. The Ainu in the east use this wood in making paraphernalia connected with funerals. The charcoal or ash is used as a medicine. Ainu will not throw this wood into the sea, as it is said to interfere with the fishing. Common.
83	Viburnum dilatatum (Thunb.) = Gomi.	Used for wooden nails. Fruit edible; in some parts eaten with rice. In Tamba it is called "Usi-koroshi," or "ox-killer." It is used in making nose-pieces for oxen.
84	Viburnum Wrightii (Mig.) = Yani-azomi.	Remarks like No. 83. Common.
85	Viburnum furcatum (Bl.) = Biva ka.	Wood used for small articles. Fruit not eatable.
86	Viburnum opulus (L.) = Medo-no-ki.	Used for fences. Fruit edible; may be made into wine.
87	Lonisera coerulea (L.) = Yo-no-mi	Fruit edible.
88	Lonicera Morrowii (A. Gray) = Futago-shiba.	A bush with red berries. Very poisonous.
89	Lonicera Glenni (Fr. Schm.) = Oba-bushi-dana.	A bush.
90	Lonicera chrysantha (Turcz.) = Oni-bushi-dana.	A bush.
91	Diervilla Japonica (D. C.) = Gajia-shiba.	Beautiful flowers. Might be used in gardens.
92	Vaccinium Japonicum (Mig.) = Aku-shiba.	Fruit edible.
93	Vaccinium vitis-idaea (L.) = Twa-momo.	Fruit edible.
94	Vaccinium nirtum (Thunb.), var. Smallii (Max.) = Suno ki.	Fruit edible.
95	Vaccinium ciliatum (Thunb.) = Suiba.	
96	Gaultheria adenothrix (Max.) = Aka dana.	Fruit edible.
97	Gaultheria pyroloides (Hook. f. et Thoms.) = Shiro-tama.	Fruit edible.
98	Leucothae Grayana (Max.) = Hana-fusube.	Leaves and twigs have a hot taste and strong smell. Thrown in the w.c., they kill insects and prevent smell.
99	Cassandra calyculata (Don) = Yachi-tsu-tsuji.	
100	Andromeda campanulta (Mig.) = Yen-tsu-tsuji.	Beautiful plant for garden. Take the bark off, and the large stems may be used for ornamental columns in buildings. Near Esan there are plants 10 feet high and 5 feet in circumference.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
101	Phylodloce pallasiana (Don) = Hime-onko.	This is an evergreen, with a perfume. It may be planted in pots.
102	Elliottia paniculata (Benth. et Hook.) = Hozaki-tsu-tsuji.	A garden plant.
103	Elliottia bracteata (Benth. et Hook.).	
104	Ledum palustre (L.), var. Dilatatum (Wahl.) = Hime-shakunagi.	A garden plant.
105	Rhododendron brachycarpum (S. Don) = Byaku nagi.	Small straight stems, used for rulers. A garden plant.
106	Rhododendron Metternichii (Sieb. et Zucc.) = Shiaku-nagi.	A pretty plant for garden.
107	Rhododendron chrysanthum (Pall.) = Kibana-shiaku-nagi.	A garden plant. Leaves used for medicine.
108	Rhododendron indicum (Sweet), var. Kaempferi (Max.) = Tsu-tsugi.	A garden plant.
109	Rhododendron Albrechi (Max.) = Murasaki-tsu-tsugi.	A garden plant.
110	Menziesia petandra (Max.) = Aŏ-tsuri-gane-tsutsugi.	
111	Menziesia ciliicalyx (Max.) = Murasaki-aŏ-tsuruigani-tsu-tsugi.	A garden plant.
112	Clethra barbinervis (Sieb. et Zucc.) = Sada meshi.	In the interior some have stems 5 feet in circumference.
113	Symplocos crataegoides (Don) = Aŏdama-no-ki.	Used in gardens. Young leaves edible.
114	Symplocos prunifolia (Sieb. et Zucc.) = Hai-no-ki.	
115	Styrax obassia (Sieb. et Zucc.) = Ho-bi-ro.	Used for carving; making ladles. A garden plant. Ainu use leaves as tobacco.
116	Styrax Japonica (Sieb. et Zucc.) = Gisha-no-ki.	Same as No. 115.
117	Syringa amurensis (Rupr.), var. Japonica (Max.) = Dosu-naru.	Used for small work. Seeds used as medicine. Rare.
118	Fraxinus Mandshurica (Rupr.) = Yachi-damo.	Used for making furniture, boats, oars; for charcoal. On the stem a kind of mushroom (*Damodake*) grows.
119	Fraxinus longicuspis (Sieb. et Zucc.) = Aŏdamo.	Used for wooden hammers, tool handles, charcoal. Ainu women use the soot from the smoke of this wood as a dye in tattooing. It burns without drying, and is called "Ainu matches."
120	Ligustrum medium (Fr. et Sav.) = Itashi.	Used as a hedge plant.
121	Clerodendron tricotomum (Th.) = To-ü-no-ki.	Roots and leaves used as a medicine for fever. Dried leaves edible. An insect found on this tree, called "Kusagi-mushi," is given to children as medicine.
122	Callicarpa Japonica (Thunb.) = Kome-no-ki.	Makes good handles for chisels. Ash used as a dye. In Akita ken the ash is used to dye deer-horns.
123	Linedera serica (Bl.) = Tori-koshiba.	Used for hedges; also in making matches and tooth-picks. Common in Southern Yezo.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
124	Daphne jesoensis (Max.) = Nani-bratsu.	A garden plant. Used in making paper.
125	Daphne chinensis (Lam.), var. Flore breviore (Max.) = Karasu shikimi.	A common bush. Inside bark is white, and makes strong paper.
126	Elaeagnus uribellata (Thunb.) = Gumi.	Common bush. Fruit edible.
127	Viscum album (L.) = Hoya.	
128	Daphniphylum glaucescens (Bl.) = Yuzuri-ha.	Used in gardens. The wood used for small articles. Leaves used in certain ceremonies. At Kumano young leaves are eaten, and are called "Shō-gatsu-ha" ("January leaves"). Common.
129	Ulmus campestris (Sm.), var. Lavis (Planch.) = Aka-do-mo.	A common tree. Used as timber, and for charcoal; ship-building, making waggons. Sap used for medicine. Inner bark is woven into a coarse cloth.
130	Ulmus campestris (Sm.), var. Vulgaris (Planch.) = Kobu-damo.	Uses like No. 129. Rare.
131	Ulmus campestris (Sm.), var. Major (Planch.) = Chigiri-damo.	Uses like No. 129. Rare. Leaves are used as a fine sand-paper, just as the leaves and stems of the "Muker" are used.
132	Ulmus montana (Sm.), var. Laciniata (Traut.) = O-hi-yō.	Used for charcoal, and as timber. From the inner bark or fibre ("Atsu") the Ainu weave a coarse fabric called "Atsu-shi." Common.
133	Celtis sinensis (Pers.) = Ē-nō-ki.	Used as firewood and charcoal.
134	Morus alba (L.), var. Stylosa (Bureau) = Kuwa.	An ornamental tree; used for making boxes, furniture, paper, &c. The Ainu use it for making bows, or curve it as runners for sleighs. Fruit edible.
135	Juglans Sieboldiana (Max.) = Kurumi.	Used for furniture, gun-stocks, boxes. Juice from bark used to dye fishing-nets. Bark and leaves used as a protection from fleas and other insects.
136	Pterocarya rhoifolia (Sieb. et Zucc.) = Yashi.	Used for making clogs; suitable for boxes. From the bark a tray-like basket is made.
137	Myrica Gale (L.), var. Tomentosa (D. C.) = Yachi-yanagi.	
138	Betula alba (L.), var. Vulgaris (D. C.) = Ganpi.	Common tree. Bark used for roofing. Used by fishermen for torches. Used for tool handles, ladles, &c. Firewood.
139	Betula Maximowicziana (Reg.) = Makaba.	Common. Uses like No. 138, but the bark is better.
140	Betula Ermani (Cham.) = Dosu-gampi.	
141	Alnus viridis (D. C.), var. Sibirica (Reg.) = Dakeba.	Used as firewood. Bark and seeds used as dye.
142	Alnus firma (Sieb. et Zucc.), var. Multinerria (Reg.) = Shiba.	Bush. Uses like No. 141.
143	Alnus maritima (Nutt.), var. Arguta (Reg.) = Yachiba.	Common. Small stems, made into charcoal, used in making gunpowder. Bark used as a dye. From wood, furniture, keels for boats, &c., are made.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
144	Alnusi ncana (Wild.), var. Nircuta (Spach) = Hanno-ki.	Used as wood for furniture. Bark used as a dye. Yields a gunpowder charcoal better than No. 143.
145	Carpinus cordata (Bl.) = Kuchiguro.	Rare. Used for making furniture, charcoal, &c.
146	Carpinus corodata (Bl.) = Sone.	
147	Corylus rostrata (Ait.), var. Sieboldiana (Max.) = Hashibami.	A bush. The seeds edible.
148	Ostrya virginica (Willa) = Asada	For making sleighs, flooring-boards, furniture, and charcoal. Common.
149	Quercus dentata (Th.) = Kashiwa	Used as wood, and for charcoal. Bark makes a dye used for fishing-nets. Acorns as food for pigs. According to shape of leaves, there is the round-leaved Kashiwa, the broad-leaved Kashiwa, &c.
150	Quercus crispula (Bl.) = Mansra.	Used in ship-building, making furniture, charcoal, &c. A certain kind of mushroom grows on this tree.
151	Quercus grotserrata (Bl.) = Mizu-nara.	Uses like No. 150.
152	Quercus grandulifera (Bl.) = Ishinar.	For making sleighs, water-tubs, and as charcoal. Tannin and dyes extracted. Common.
153	Castanea vulgaris (Lam.), var. Japonica (D. C.) = Kuri.	Used in ship-building, making buckets, sewer-pipes, railway sleepers, piles, and for furniture. Sap from bark used in painting. Nuts edible. The charcoal from the nuts used in welding iron. Common.
154	Fagus sylvatica (L.), var. Asiatica (D. C.) = Buna.	Common in Southern Yezo.
155	Salix acutifolia (Wild.) = Kawara-yanagi.	Boards on which things are cut. For fuse it is inferior to Hakoyanagi (No. 163). As fastenings in retaining walls, and for charcoal; used in making gunpowder. Common.
156	Salix caprea (L.) = Oba-yanagi .	Used in making boxes, boats; and as wood and charcoal. Common.
157	Salix multinervis (Fr. et Sav.) = Kori-yanagi.	Used in making fascines, and for hedges.
158	Salix viminalis (L.) = Uraziro-yanagi.	Used in fascine work.
159	Salix repens (L.), var. Rosmarinilofia (Anders.) = Koba-yanagi.	Uses like No. 158.
160	Salix Japonica (Th.) = Yo-yanagi	Uses same as No. 158.
161	Salix padifolia (Anders.) = Tchi yanagi.	Planted to give support on sand and mud embankments.
162	Populus suavolens (Tisch.) = Doro.	Used for "dug-out" canoes; making boxes and matches. Paper and matting made from a fibre obtained from the seed. The fibre is smooth, flat, and short, but as the fibres are of different lengths it cannot be used in cotton mills. Common.

No.	Name, with Japanese Synonym.	Remarks on Uses, &c.
163	Populus tremula (L.), var. Villosa (Wesmael) = Hako-yanagi.	Uses like No. 162.
164	Empetrum nigrum (L.) = Kokeno-ki.	Seeds edible, raw or salted. The leaf stem is used to catch the end of the silk fibre from cocoons.
165	Thuya dolabrata (L.) = Hinoki .	Rare in Yezo. Used for buildings and timber. A rope-fuse is made from the bark. A garden tree. A record tells us that in 1684 nearly half the Hinoki of Yezo was burned.
166	Juniperus littoralis (Max.) = Tso-sugi.	A garden shrub. Seeds used as a medicine and as a perfume.
167	Juniperus chinensis (L.) = Twa-matsu.	A garden shrub.
168	Cephalotaxus drupacea (Sieb. et Zucc.) = Hiyōbu.	Ainu use the wood for bows. Oil is made from seeds, the outer parts of which are edible.
169	Taxus cuspidata (Sieb. et Zucc.) = Ōnkō.	Seeds edible. Used to make boards, boxes, small arrows, combs, pencils. To colour the combs they are boiled with the ashes of a shell called "Hotate-gai."
170	Pinus parviflora (Sieb. et Zucc.) = Go-yo-matsu.	Somewhat rare. Used as a garden plant; also in building, but it decays rapidly.
171	Pinus pumela (Reg.) = Hai-matsu.	Common. Used in gardens. Used as timber. Seeds edible. Bears said to like them. This is the "Shimpo-furi-matsu," and not the "Hai-matsu."
172	Pinus ajanensis (Fisch) = Ezo-matsu.	Common; 40 feet to 50 feet high. Gives good lumber. Used in ship-building and house-work. Twigs used for decoration. A mushroom from this tree is used as an antidote for certain poison.
173	Picea Glehni (Schm.) = Akaĕzo .	Uses same as No. 172.
174	Abies sachalinensis (Masters) = Todo matsu.	Used as lumber; for ship-building, as masts. Some trees are 100 feet high. Twigs used for decoration.
175	Larix dahurica (Turcz.), var. Japonica (Max.) = Shikotau-matsu.	Used for building purposes. A mushroom from it used as medicine. A brown mushroom from the dead tree used for sore eyes and stomach-ache.
176	Smilax China (L.) = Sankira .	Used for walking-sticks. Dried leaves, prepared in tobacco-water, are sold as tobacco; value, 7–10 "sen" per lb.
177	Bambusa tessellata (Munro) = Zidake.	Used for hedges, making fascines, baskets, paper, and, in winter, food for cattle. The Ainu eat the seeds. Common.
178	Bambusa tessellata (Munro) = Shakotau-chiku.	Used for umbrella handles, walking-sticks, pipe-stems, &c. Rare.
179	Arundinaria Japonica (Sieb. et Zucc.), var. (?) Kagodake.	Used for making baskets. Common.

A

JOURNEY ROUND YEZO

AND UP ITS

LARGEST RIVERS.

BY

A. HENRY SAVAGE LANDOR.

WITH MAP.

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A JOURNEY ROUND YEZO

AND UP ITS

LARGEST RIVERS.

By A. Henry Savage Landor.*

Map, p. 540.

I began my journey from Hakodate, the most southern port of the island of Yezo. Yezo and the Kurile Islands, taken together, are called by the Japanese the Hokkaido, and it is in this part of the Japanese Empire that are found the remains of that strange race, the hairy Ainu.

Yezo is by no means as yet a well-explored island, though from its position on the charts we see that it is comparatively within easy reach of civilised Southern Japan. From a geographical point of view especially, Yezo has been much neglected. However, we have a very interesting account of Capt. Blakiston's journey in the *Journal* of this Society (Vol. XLII. 1872), and I wish to draw attention to Capt. Blakiston's paper, for, having travelled over all the parts of the coast-line visited by him, besides many parts which he did not visit, I am pleased to say that I can fully corroborate nearly every statement which he made as regards the country and its inhabitants; in his descriptions I invariably found him remarkably accurate, impartial, and open-minded. I only read his accounts of Yezo a long time after I had returned from my journey, and therefore had formed my own impressions.

I shall not dilate on my object in visiting the hirsute people, for I had no special object beyond simple curiosity and love of adventure. The preparations which I made for the long journey I was to accomplish did not trouble me much. I took next to nothing in the way of clothing, besides what I wore, no provisions, and no medicaments. It was my idea that if the natives could do without these things, I could also. My art was less neglected. Three hundred small wooden panels for oil-painting, and a large supply of colours, brushes, and sketch-books packed in two Japanese baskets made my equipment.

Travelling in Yezo is entirely done on ponies, or on foot, therefore the less one takes the better. As to friends, companions, servants or grooms, I had nobody with me, and had it not been for my palette and

* Paper read at the Royal Geographical Society, January 20th, 1893. Mr. Landor's map has been prepared from the latest charts of the English Admiralty, a map of Yezo by Mr. N. Fukushi of Sapporo, and the sketches of the courses of the Tokachi and Kushiro Rivers by Mr. H. S. Landor.

brushes, I would have certainly died of loneliness in my one hundred and forty-six days' ride around Yezo, up its largest rivers, and during my trip to the Kuriles. I set off alone in June 1890, with a light heart and light baggage.

In the neighbourhood of Hakodate, Japanese civilisation has set in, and no Ainu are left till one comes to Volcano Bay. A road has been cut from Hakodate to Mori, a distance of 30 miles, passing the lovely lakes of Zenzai and Ko-numa with the pretty and thickly-wooded hills which surround them. The larger of the two lakes seems of comparatively recent origin. Its level has been raised, as is apparent by the number of submerged tree-stumps. This may have been caused by the action of the neighbouring Komagatake volcano. There are evident proofs in the strata of the soil round these lakes, that not only one but several eruptions have been the main causes of their formation.

The Komagatake volcano rises to a height of 4011 feet above the level of the sea, and it forms part of what we might call the "Oshima Volcanic Zone," which extends from south-east to north-west, from Cape Esan to Yurapdake Mount, and from south-west to north-east, from Shirakami Cape, the most southern point of Yezo to the Komagatake Volcano, on Uchiura or Volcano Bay. The Komagatake mountain is extremely beautiful, rising as it does from the sea in a gentle curve. Its lower slopes are thickly wooded, and its higher altitudes are barren and rich in colour. The vegetation on and about Komagatake consists mostly of maples and oaks on the middle altitudes, and poplars, alders, ash, and smaller trees in the neighbourhood of the lakes.

From Mori I went across Volcano Bay to Mororran, 28 miles north-east of Mori, in a straight line. At the entrance of Mororran Bay, one has to pass between the broken cliffs on one side, and the pretty island of Daikoku, which stands high, on the other. Mororran, which is divided in Kiu-Mororran and Shin-Mororran, was formerly called Tokarimoi, or "home of the seals," by the Ainu. I dare say that if Mororran were in more speculative hands it might become a great rival to Hakodate. The harbour, though not of very large capacity, is well-sheltered on all sides, and when a railwey will join this place to Sapporo and the Poronai coal-mines, there is no doubt that a great deal of the shipping will be transferred from Hakodate to this place. North-west of Mororran on Volcano Bay are found the villages of Mombets, and then Uso and Aputa, the two latter being the largest Ainu villages on Volcano Bay.

Three or four miles west of Aputa is a large circular lake, the Toya-ko, with three pretty islands in the centre. The largest is of conical shape. This lake also, I should think, was formed by volcanic action. On its shore is found the Usu Volcano rising about 1868 feet above sea-level. It has two warmly-tinted peaks and a smaller pinnacle. Part of its summit is terrace-like and quite horizontal. The mountain is rugged

and picturesque, but it does not possess the graceful lines which Komagatake has.

The Ainu which I saw at Usu and Aputa were the first I came across. They are those most talked about, because they are easily accessible from Hakodate. The Volcano Bay Ainu are those who have had most intercourse with their conquerors, the Japanese. They have to a certain extent adopted Japanese clothes, customs, and manners, and some live on Japanese food of poor quality. Intermarriage between the two races is frequent, not to say common; and therefore a large average of the population, in that part of the coast, is composed of

STORE-HOUSES AT PIRATORI.

half-castes and even second and third crosses. It may be interesting to note that when intermarriage takes place in the first instance, it is generally and almost invariably a Japanese man that marries an Ainu woman. Seldom the reverse, though I have known a half-caste woman marry an Ainu man. The offspring of this curious mixture, of the dirty and hairy Ainu with the extremely unhairy and clean Japanese, are undoubtedly peculiar. They are usually not so hairy as the real Ainu, and they are not so good-natured; nor do they inherit the quick perception and brightness of their Japanese relations. In fact these half-breeds seem to have acquired all the bad qualites of both the Ainu and the Japanese, and not to have retained any of the good ones.

Leprosy especially is quite common among half-castes, while I have seldom seen a real Ainu suffering from it. Many travellers, basing their statements on these half-castes, have come to the conclusion that the Ainu belong to the Mongolian race, and that they are closely akin to the Japanese.

From Aputa I rode back to Mombets, and from there to Mororran. I then proceeded towards the east, where I halted for the night at a village, half Ainu, half Japanese, called Horobets. This village stands on the level ground between the sea and the thickly-wooded hills at the back. The Ainu settlement here is quite large, and their huts are scattered along the beach for some distance.

Nine miles further north-east, along a level road of pumice, between the sea on one side and a thickly-wooded mountainous mass on the other, one comes to Noboribets. It is quite evident, as has been said by others, that the land here gains much on the sea. Volcanic walls, cliffs, and headlands, which to all appearance must have not long ago formed the shore-line, are now some distance inland, and in some places even miles away from the sea. Roughly speaking, most of the present shore-line between Mororran and Yuhuts and a great area of the plain in which Sapporo is situated is covered by a pumice layer, forming the surface-soil.

I pushed on to Tomakomai, the largest Japanese fishing-village between Mororran and Cape Erimo. The sardine fishery, which is the principal and indeed the only industry of the place, is done in a practical way. The end of a long net (about 200 yards long by 3 yards wide) is fastened to the shore, while the bulk is placed on board a large boat, which is then launched and rapidly rowed by twenty or thirty strong men. The net is dropped as the boat goes along. Having described a semicircle the boat is beached. All on board jump out and the net is pulled on shore among the shrieks and yells of the excited fishermen. Myriads of sardines are caught each time the net is hauled in. They are very plentiful all along that coast about the month of July. Look-out houses are erected on four high posts, whence a watchman signals the arrival of the shoals. The sea is so dense with them that it changes its colour, and these moving banks of sardines are distinguishable 4 or 5 miles from the coast.

Between Tomakomai and Yuhuts the volcanic mountain mass comes to an end, and in the soil there is a depression which extends across that part of Yezo in a northerly direction, as far as the basin of the Ishikari river on the west coast. It is not improbable that this depression in the mountainous regions, which, as we have seen, has all the appearance of having been raised above sea-level by volcanic action, was in former days submerged, and that it divided the Island of Yezo into two islands. This stretch of land, covered as it is with volcanic ashes and pumice, is quite unfit for farming operations, although trees seem to thrive fairly well on it. At Tomakomai the road branches off for Sapporo *viâ* Bibi and Chitose. Between these two places the ground is somewhat better, and

near the road, here and there, small squares are under cultivation mainly of root-crops.

Eastward along the coast from Tomakomai the road becomes a mere horse-track. Many fishermen's huts are scattered along the coast between Horohuts and Yuhuts (9 miles), and, still following the sea-beach for some time, one then leaves the sea on the right, and, by a very uneven track over hills, one reaches the Mukawa River some 14 miles distant from Yuhuts. From Yuhuts the coast-line tends towards the south-east. I halted for the night at Saru Mombets, about 4 miles beyond the Saru River. I left here part of my baggage, and the next day rode over the hill-track to the village of Piratori, one day's journey up the Saru River. The scenery is neither grand nor beautiful, but the numerous Ainu huts and villages, the profusion of firs, and the oak trees on the higher terraces, certainly made this part of my journey pleasanter than riding along the monotonous barren coast. The Saru district is interesting, for it is along the banks of the river which intersects it that the largest settlement of Ainu in Yezo is to be found.

Piratori, about 15 miles from Saru Mombets, is the largest of the Ainu villages, or to be more correct, it is a string or succession of many villages. It is prettily situated on a high cliff overlooking the river. The Ainu found here are decidedly purer in race than those found on Volcano Bay; but even these have unfortunately adopted some Japanese garments and a few Japanese customs.

All Ainu villages, with the exception of size, the variation of shape in the huts, and a few small details, are pretty much alike wherever found. The huts are generally set at short intervals in a row (especially along sea-beaches), and almost every hut has its small store-house built separately on posts some few yards off. Ainu architecture is by no means elaborate, not to say beautiful; but though it is so simple it is to a certain extent varied, differing according to the exigencies of the climate and locality. Huts of one district vary from those of another both in small details and in the whole shape; and if the shape is the same the materials are different. The principal characteristic of the Volcano Bay and Saru River huts is, that they have angular roofs and are thatched with tall reeds and Arundinaria. Each hut possesses a small east window about the size of a handkerchief, and a small door, the "fittings" of both these apertures being a rough mat. Huts are occasionally provided with a small porch, which answers the double purpose of kennel and fire-wood store. The Ainu hut has a fireplace in the centre, or rather I should say a fire is burnt in the centre of the hut. The fire is lighted by friction of two sticks, or with a flint and steel (a method learnt from the Japanese). The more civilised have adopted matches. A hole in the angle of the roof acts as chimney, but unfortunately more in name than in practice.

The Ainu are not much burdened with furniture. A mat or two, a

few skins, a wooden bowl, a moustache-lifter, a bow and a few arrows, and occasionally a rough weaving-loom, are about all the articles of their own make which they possess. In winter, when the days are short, they sometimes light their dwellings with a stick, to which is fastened a piece of animal fat. This is hung up, and when the lower end is lighted, the fat slowly melting serves to feed the flame of this primitive lamp and keep it alight. Another mode of illumination is by fixing a lighted piece of birch-bark on a stick previously split at the upper end. The third way is by filling a large oyster-shell with fish-oil or molten fat, and burning in it a few strings of elm-fibre. The refuse of the house is either thrown into a corner of the hut or flung outside the door and left there. It is, indeed, difficult to say whether the inside or the outside of an Ainu hut is the dirtier. Heaps of stinking refuse are accumulated round the dwellings, and in summer-time these heaps are alive with vermin, mosquitoes, horse-flies, common flies, and black-flies. These black-flies are terrible, and the natives themselves suffer much from them. They are so small that they are hardly visible, and so numerous as to make life almost unbearable at times. In the space of a minute every available part of unprotected skin is covered with black itching marks, left by the stings of these imperceptible devilkins. Inside the huts you are no better off. Fleas, the *taikki* of the Ainu, are innumerable, and of all sizes, not to mention other well-known, but usually anonymous enemies of the human skin. The first night I slept in an Ainu hut, though I was provided with insecticide powder, I was literally covered with bites. My skin got so inflamed by them as to produce a strong fever, which lasted two or three days.

The store-houses stand about 6 feet above the level of the ground, and are generally on four, six, or eight piles. Upon each pile is placed a square piece of wood turned downwards at the sides so as not to be accessible to rats and mice. Upon these pieces of wood rest horizontally four rafters, forming a quadrangle about 8 feet square. The small store-house has as a base this quadrangle, and is seldom high enough to allow of an adult to stand erect inside.

The next noteworthy point in connection with Ainu habitations is the skull-trophy, at the east end, outside of the hut. This is made of a number of bi-forked poles, upon which are placed the skulls of the bears, wolves, and foxes killed by the owner of the hut. Then come the rough quadrangular cages where one or more bears are kept alive and fattened, to be eaten at bear-festivals.

At Piratori I made friends with the good-natured natives, and with Benry, the well-known chief of the village, who has been spoken of already in English literature by Miss Bird and others. I was treated kindly by the hairy Piratorians. I witnessed one of their rare festivals —a solemn performance, which consists mostly of all the male members

of the community getting helplessly drunk, while the representatives of the fair sex, dressed up in their *atsis*, a long gown woven of the inner fibre of the *Ulmus campestris*, indulge outside in a curious and rude form of dancing. The dancing is accompanied by rhythmical sounds imitating the noises produced by implements in every-day use, as the squeaking of a paddle by its friction on the canoe, or the cry which accompanies the pounding of millet with pestle and mortar, the blowing alight of the fire, and similar sounds. Time is kept by clapping the hands and by vociferations, which tell the partners what position or action to assume, each action being accompanied by a different sound, but all performed while the hopping is kept up. The dancers form a circle with sometimes one or two children in the centre.

The Ainu have no history, no books, no writing of any kind, and the majority of them cannot even count. Their own form of government is simple. Each village has a chief, the chieftainship being hereditary to a certain extent. All that is required to fulfil the duties of the office is that the man be brave, and sound in mind and body, and also, I should

TOYA LAKE NEAR APUTA.

add, that he have an extra large capacity for intoxicants. In this last respect, Benry, the chief of Piratori, beats by far all the other chiefs it was my good fortune to meet in Ainuland. Chiefs have no very great authority over their subjects, though their tribesmen have a certain respect for them. Their grade is merely honorary, and they take the lead in bear-hunts or fishing expeditions, and are allowed or allow themselves to drink more than ordinary hairy mortals at festivals or on similar occasions.

The Ainu have no laws and no morals. Punishments are very rarely inflicted on any tribesman, and capital punishment is not practised. Quarrels are generally settled between the parties concerned; but naturally if any member should interfere with the happiness of the community, undoubtedly he would be taken and flogged, or probably disabled by the cutting of the tendons of his feet and hands. The latter punishment, however, is very seldom inflicted. The Ainu stand low in the scale of humanity. Apparently they have always been low; they have not sunk, for they have never risen.

The Ainu are polygamists. To civilised ears, what, for want of a better word, I shall call "their laws of marriage" are simply disgusting. Intermarriage among the nearest relations is frequent, and among relations in general it is an everyday occurrence; for members of one village seldom marry those of another. When asked why they marry their closest and nearest relations, as their own children and brothers or sisters, the reason they give is that bears, dogs, and other animals do it, and they, the Ainu, do not think themselves any better. In this conclusion, of course, I am sure that most people will agree.

The Ainu language is extremely poor in words. It is a language apart from any belonging to the neighbouring countries.

Of religion the Ainu know nothing. They have a few superstitions, and that is about all. They have no supreme God and no intelligent Creator. They are not Polytheists; indeed they are not worshippers of any unseen power, for taking the word in its real meaning, the Ainu worship nothing. Like all animals they show a certain amount of respect and fear for anything which supports their life or can destroy it; but as we would not think for a moment that a dog barking at the moon is worshipping the orb at night, neither are we entitled to say that the Ainu worship the sun, because they have an east window to their huts; that they worship the fire because they sit by the side of it to warm themselves, or rivers, mountains, etc., because they drink the water of the first, and climb the heights of the second. In fact, if the learned writers who have put the Ainu down as Polytheists had relied more on their common-sense than on their imagination, they would have found that the reason why they have an east window is that on that side the aperture gives more light and warmth than it would were it looking towards any other point of the compass. I shall not discuss this question at length, and shall content myself by describing the Ainu as having superstitions, but no religious beliefs.* Having thus introduced the hairy Ainu, I shall continue with my journey.

A few miles east and also north-east of Piratori coals are found in small quantity. I retraced my steps to Saru Mombets on the coast. I felt a pleasant sensation on leaving Saru Mombets, for after that point I was altogether out of the beaten track of most travellers to Ainuland.

As we follow the coast towards Cape Erimo, at a distance of 7½ miles from Urakawa, the beautiful boulders, rocks and pillars of Shamane come into sight. Standing boldly out from the sea, and of a rich brown tint, they are most picturesque and fantastic in shape, and the small bay in which Shamane village lies may be said without exception to be the loveliest spot on the south-west coast of Yezo. Shamane is a village of a few houses built on the site of a promontory jutting out into

* In 'Alone with the Hairy Ainu,' by A. H. Savage Landor, now in the press (Murray), this subject is fully discussed and developed.

the sea. From there looking towards Urakawa there is a lovely view of all the small islands and picturesque rocks standing like huge jewels in the water, while on the Horoizumi side, as far as the eye can see, are only cliffs of peculiar shapes and marvellously rich in colour. I pursued my journey to Horoizumi for nearly 20 miles. There were rocks, rocks, nothing else but rocks.

The riding was heavy and difficult, and my ponies stumbled and were on their knees all the time. Near Shamane a large natural stone archway (Shiushma) emerges from the sea. Holes have been pierced through the rocks in several places to give safe passage and prevent wayfarers from being carried away by the waves. The rivers in this part of the coast are not wide, but they are extremely swift and dangerous to cross. Sardines are very plentiful all along the south-west coast. Long coarse seaweeds also abound, and are collected for exportation to Chinese markets.

Horoizumi, a village of one hundred and fifty houses, is built on the side of a cliff, and from a distance it reminds one of the pretty spots round the Gulf of Spezia in Italy; 7½ miles south-east of Horoizumi is Cape Erimo (August 10th), the most southern point of that coast, which from this point sharply turns to the north-east. Thick fogs are prevalent along the south-east coast, and a lighthouse has been recently erected by the Japanese Maritime Department. A steam fog-horn has also been provided for the greater safety of navigation. A reef of rocks and a stretch of shallow water extend out in the sea for about 2½ miles from the cape. The fog-horn, I was informed, was *only blown* when the lighthouse-keeper suspected some ship was likely to make for the rocks; a likely thing, indeed! The light, however, was shown every night. The *Mary Tatham*, an English screw-steamer, while on her journey from Shanghai to Oregon, was lost in 1882 with nearly all lives on board about 2 miles from this Cape.

From a geological and geographical point of view Cape Erimo is interesting, as it is the terminating point of the backbone of the main portion of the island, formed by the range of mountains which extends from near Cape Nossyap to Cape Erimo, from north-north-west to south-south-east. At the foot of the Erimo cliffs is the small fishing village of Okos. The sea is shallow, and there are many low-lying reefs which afford abundance of kelp and seaweeds. Between Horoizumi and Cape Erimo three high pillars (Utarop) stand out of the sea.

Before leaving the south-west coast it is well to mention that it entirely lacks good harbours, or even fairly well-sheltered anchorages. There are no roads, and it possesses no very large extent of ground suitable for farming purposes.

Having returned to Horoizumi I moved on to Shoya on the south-east coast by the mountain-pass, which the natives said was very dangerous on account of bears. The trail is through thick woods, and, nearing

Shoya to the south-west, a lovely view of Cape Erimo lies like a picture before your eyes. There are about thirty houses at Shoya at the foot of the cliffs, and the place might be described as a "miserable hole." The rough weather and several land-slides had broken all communication between Shoya and the next settlement north-east, so I was delayed half a day. I could get no one to carry my baggage on the rough mountain trail, as it was impassable for my ponies. They all said that the mountains were infested with bears, and no one wished to risk the danger of an encounter. The cliffs near Shoya are remarkable for their beauty, especially a huge archway not more than one mile from the settlement. The rocks are mostly eruptive rocks.

It was before sunrise when the tide was at its lowest that I left Shoya and pushed my way along high cliffs, boulders, among rocks, and through occasional artificial tunnels, heartening my horses with howls as well as stirring them up with my whip. In the clear morning light of the rising sun the scenery between Shoya and Saruru was magnificent, and I was just in time to get through before the tide rose; but from Saruru I was compelled to follow the mountain trail, which rises rapidly and necessitates a stiff climb among thick shrub until the summit of the mountain range is reached. On the other side at a lower altitude I got into the thick forest and shrub, and finally reached Biru, or Moyoro, as it is called by the Ainu.

Biru is a village of forty houses situated on a small bay, in the centre of which several gigantic pillars stand out at a great height. Sardine manure and kelp and seaweed collecting are here, as well as on the south-west coast, the main industries of the few inhabitants. Between Biru and Perohune I had to cross four *deltas*, of which the one on the Toyoi River was the largest. At Perohune there is only one house. North-east of Perohune I passed two lakes, or lagoons, the Tobuts and the Yuto. Both are divided from the sea by a narrow sand embankment. The coast for 22 miles is deserted, and the shore-line is covered with a great number of drift-logs which had been washed on shore.

During the summer months the fog is always intense along this coast, owing, I believe, to a warm current, probably the Kuro-shiwo, or Japan current, which parts from the main stream near the south-west extremity of Japan, and goes through the Corean Strait. One branch of it passes through the Tsugaru Strait, while another runs along the west coast of Yezo, then through the La Perouse Strait into the Sea of Okhotsk, and ultimately having come through the channels between the islands of the Kuriles, turns again south, following the south-west coast as far as Erimo Cape. Here, in all probability, it meets a colder current, which, coming in contact with the warmer, causes the intense fogs.

On August 15th I reached Otsu, a small Japanese village, situated on the western mouth of the Tokachi River. The present situation is not well suited for the prosperity of the settlement; first, because this

mouth of the river is frequently blocked by drift-sand, and also on account of the scarcity of good drinking-water. The Tokachi River is one of the three large rivers in Yezo. It is not navigable for large crafts, but dug-outs and canoes can navigate it for about 60 miles from its mouth.

The upper Tokachi region is the part of Yezo which was yet unknown, and where even Japanese civilisation had not reached. I somehow formed an idea that some pure types of Ainu might be found far up the river-course, and, without thinking twice over it, I decided to attempt the expedition. The reports which I heard at Otsu, of the savageness of the natives who were supposed to live inland, the quantity of yellow bears, and the thick jungle of high grass and reeds, were not encouraging, but I started all the same, having determined to go and see for myself. I soon came to the jungle, and the high reeds and tall grass were higher than myself on the pony's back. I had not been long in it when I was simply devoured by horse-flies, black-flies, and mos-

ERIMO CAPE.

quitoes. I kept along the river-bank, or not far from it, as much as I could, being guided by the sound of the running water. During many wearisome hours I rode through this jungle, the dividing reeds often producing deep cuts on my hands and face with their razor-edged long leaves. The river-course has a general direction of north-west to south-east.

Some 25 miles from the coast I passed two large swamps which forced me to make a grand *détour*. After about as many more miles, still among this troublesome grass, I finally came to a few Ainu huts. I was half-starved when I reached this place. The natives were much astonished at my appearance; they spoke a slightly different dialect of the Saru-Ainu language; and I found them extremely good-natured, notwithstanding what has been said in one of the last publications by an author—who by the way, has not been within a few hundred miles of here—that these particular natives are cannibals. Men and women were half naked or had a few rags of *Atzis* cloth, or skin. They were

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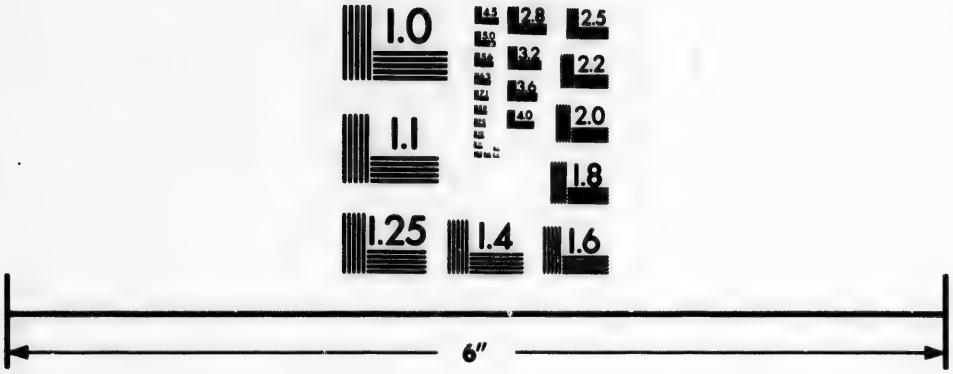

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extremely hairy, but their features were in no way like those of Mongolian races; in fact they had more the characteristics of Aryans.

Chiota (seven huts) and Yammakka (ten huts) were the first two villages I came across. Up to this point from the coast all is a level plain, but from this in a westerly direction the ground rises in a gentle incline, therefore there is a complete absence of the high and troublesome reeds which I had found in the vast marshy plain I had crossed to get here. Leaving this point, and on information collected from the natives, I pushed on west by a small trail to the villages of Ikambets (twelve huts), Chiroto (eleven huts), Mokambets (six huts), Pensatsunai (six huts), Obishiro and Frishikobets (thirty-four huts). At Frishikobets there is a large extension of flat ground, partly wooded. The huts are scattered about a few hundred yards one from the other and some of them are hidden in the wood. A peculiarity of these dwellings is that they are covered with the bark of trees, instead of being thatched with Arundinaria, as is the custom among the Ainu of the Saru River and Volcano Bay. I measured a number of natives, and it may be interesting to quote a strange fact. With arms outstretched from tip to tip of fingers, the Ainu invariably measure 3, 4, and 5 inches more than their own height, which shows a remarkable length of arm. Their toes also are abnormally long. Ainu women are in the habit of tattooing a long moustache across the face, ending in a point close to the ears. One straight line, or two, are occasionally tattooed on the forehead, and a rough geometrical pattern is tattooed on the hands and forearm. The Ainu of this region were very hairy.

Due north of Frishikobets, at a distance of about 10 miles, a mountain like a huge white cliff, called Shikarubets Otchirch, rises perpendicularly on the bank of the Shikaru River. This mountain stands very high, and can be seen from a great distance, especially in a north-east, north-west, and northerly direction. The Ainu use it as a land-mark when out hunting bears, and owing to its light colour it is visible even at night. I am the first European that has ascended it, and it was only with the greatest difficulty that I was able to do so. From the summit the whole of the Tokachi valley was stretched before me as far as the sea, and the greater part of the winding course of the Tokachi with all its numerous affluents could be distinguished, intersecting the green background of grass and reeds. As a farming region the Tokachi valley, plains and terraces, are certainly the most fertile in Hokkaido. All the requisites for successful agriculture can be found. The mildness of the climate, the richness of the soil, the quantity of water for irrigation, etc., besides the facility for making roads on such flat ground, are all advantages not found in other parts of Yezo. It is indeed a pity to see so much good land wasted, and the fertile Tokachi valley so deserted. Hemp, wheat, corn, potatoes, beans and all kinds of vegetables and cereals could be grown with advantage, and the produce

carried down the river to the sea with little expense or difficulty. At Yammakka, as we have seen, the land rises, but only to form a plateau, the top of which is another large plain reaching to the foot of the Oputateshike Mountain mass. The Otopke Mountain is the highest peak of this range, and it resembles in shape the Fujiama of Southern Japan. On the north-east side of this mountain are the hot springs of Nipiripets. The Otopke is the very centre of Yezo, and the Volcanic Mountain mass, which branches in three directions from it, forms the backbone of the main portion of Yezo. One branch goes to the north to Cape Nossyap and Rishiri Island; the second goes to the east to Cape Shiretoko; the third south to Cape Erimo, forming, as we have seen, the watershed of the Hidaka and Tokachi districts. North-north-west of Frishikobets, on the east side of the Tokachi, there are the following villages: Uparpenai (twelve huts), Memuroputo (sixteen huts), Ottoninai (fourteen huts), Kinney (seven huts).

The largest tributary of the Tokachi is the Toshibets, which sheds its waters into the larger river about four miles south-east of Yammakka. There are several Ainu villages along the course of this river, as Beppo (eleven huts), Kanashpa, Purokemashpa (three huts), and Pombets (twenty-two huts). The largest Ainu village in the Upper Tokachi is Tobuts (sixty huts), a short distance south-east from where the Toshibets joins the Tokachi. The return journey to the coast was marked by a small incident with a black bear; but excepting this, it was as monotonous as going up. From Otsu, moving north-east, the traveller can appreciate the beautiful delta formed in the low alluvial valley by the Otsugawa and the Tokachi, two large mouths, nearly 2 miles apart, by which the Tokachi River enters the sea. The track for 20 miles is flat and sandy, lying mostly under high clay banks, some of which form picturesque headlands. The country is not mountainous in the proximity of the coast, but is of a moderate elevation all through, and is well-wooded with deciduous trees.

The formation of the south-east coast from Cape Erimo to Cape Noshafu is in many ways unlike that of the south-west coast. The south-west part is more mountainous, and is still further characterised by the absence of extensive plains. The coast-line is indented, and there is a striking want of broad beaches. Precipitous rocks are also frequent along the south-west coast, and thick deposits of pumice are lying over quaternary rocks filling up the declivities of mountain-lands and river-shores. In the west part the tertiaries are more tufaceous than on the south-east coast, and are mainly distinguished by the presence of shales and andesite-breccia. The south-east part is characterised by the almost entire absence of volcanic rocks. After leaving the range of mountains forming the watershed east and west of Cape Erimo, high land is met all the way along the south-east coast. Pumice is found in the basin of the Tokachi River, and also in that of the Kushiro

River, but it does not cover large areas as on the south-western portions of the coast. The different aspect in the tertiaries of the east and west coast may be accounted for by the presence of breccia and conglomerate, shales and sandstone in the western part, while on the eastern coast beds of lignite, coal of inferior quality, and diatom earth, are found in the strata. If it were not for the total want of harbours, or even moderately sheltered anchorages, this south-east portion of Yezo, with its agricultural resources, its milder climate and the facility that it offers for the construction of roads and railways, ought to support a large population. As things stand now, there are no colonists inland, and the coast is deserted and desolate. Thick fogs prevail along this coast, and the light-hearted Japanese apparently find them depressing to their spirits, and trying to their nerves.

Shaubets (20 miles north-east of the Tokachi), is a village of eleven Ainu and one Japanese hut. At the mouth of the Charo River, near Shiranoka (10 miles from Shaubets), coal and lignite of inferior quality are found. Twenty-one miles on fairly level ground brought me to Kusuri, or Kushiro (five hundred Japanese houses), as it is now called by the Japanese.

From its favourable situation Kushiro is likely to become one of the chief towns in Yezo, though unfortunately it does not possess a good harbour, and is much exposed to westerly winds.

East of Kushiro is a lagoon, the Harutori (2 miles long and ¼ mile wide, divided from the sea by a very narrow strip of sand, through which the water of the lagoon finds an outlet into the sea. On the east side of the Harutori, they have found coal which seems to be of fairly good quality, and 3 miles further, quite close to the coast, coal was dug out some years ago, but the quality was so inferior that the works had to be abandoned. There is a considerable area of good land in the neighbourhood of Kushiro, and it is to be regretted that Japanese farmers do not emigrate from the main island of Nippon to work it. An immense loss occurs every year, because no one is there to take the profit.

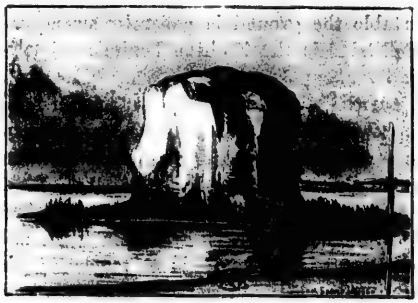
Besides the mineral resources, Kushiro exports salmon and herrings, fish manure and seaweed. On the hills near Kushiro numerous pits are found which belonged to a pre-Ainu race of pit-dwellers called the Koro-pok-kuru. This seems to have been their capital, and several forts and camps can be seen yet, where flint arrow-points, stags' bones, etc., are found.

The Kucharo or Kushiro River is navigable for small boats for nearly 20 miles from its mouth. I made my way on horseback along the banks of this river. A badly-made road has newly been cut between Kushiro and Shibetcha, a distance of 30 miles. The country all around seems fertile and the soil rich. Half way on the east side of the Kutcharo are three lakes—the Takkobe, the Tori lake, and the Shirin. The

Tori is the largest. Its length is 5 miles, its width about 1 mile. The road often runs through dense forests, and, occasionally, on the higher lands, are lovely bits of mountain-scenery towering over the shimmering water of the underlying lakes.

At a distance of about 25 miles north of Shibetcha (sixty-eight Japanese houses) there is a sulphur mountain, Yuzan, on which the most valuable sulphur deposits in Japan are found, the quantity of the mineral being practically unlimited. I ascended this mountain, and near the summit is a huge pinnacle of volcanic rock standing up perpendicularly and of impossible access.

From Yuzan a mountain trail goes due north to Abashiri on the north-east coast. I did not follow this track, but went instead in a south westerly direction, making my way for Lake Kutcharo. The large lake is surrounded by high mountains, and it has a pretty island in the centre. On the west side of the peninsula, which projects almost



ABASHIRI ISLAND.

as far as the island, a small active *geiser* is found, which rises to a height of 10 or 12 feet, and acts spasmodically. The Kushiro River is the outlet of the Kutcharo lake. From this point I returned south-east towards the coast, where I came out on the bay of Akkeshi, 42 miles east of Kushiro.

Nearing the coast I passed the colonial militia farming settlement of Hondemura. The distance between Shibetcha and Akkeshi is 30 miles. Akkeshi lies at the north-east side of the large bay which goes by the same name, and which is the best anchorage on the south-east coast of Yezo. It is about 7 miles in a northerly direction and 6 miles across its widest place. Its mouth is to the southward; the bay is prolonged inland by a large lagoon called Se-Cherippe, which contains many shoals and low islands, where are beds of oysters of immense size (from 10 to 18 inches in length). Round the bay and lagoon there is a kind of plateau 200 or 300 feet above sea-level, and the higher ground is thickly wooded with deciduous trees, as the Todo and Yezo Matsu, two spruces as found in

many parts of Yezo. With its good harbour, the export of oysters, salmon, herrings, seaweed, and its seal-fishery, besides the quantity of good timber easily cut and transported down the lagoon, it is not surprising that Akkeshi has become, after Hakodate, the most important settlement on the whole of the southern coast. It has nine hundred Japanese houses and sixty Ainu huts. I have no doubt that in future the sulphur of Mount Yuzan will be brought here for shipment instead of to Kushiro, owing to the safety of its harbour, and Akkeshi will then become the most important port of Yezo.

From Nemuro I proceeded (August 30th) to the Kuriles by sea, then I returned and continued my solitary ride round the coast, moving due north along the east coast. The Nishibets River is supposed to be the best river in Yezo for salmon, but nearly all rivers on the east and north-east coast abound in this fish in autumn. As one goes further north ponies were difficult to obtain, and I was forced to walk great distances to save my animal. Naturally there are no roads, and to make things more uncomfortable the ground is generally swampy. Eight or nine miles north of Bitskai is the Noshike Peninsula, jetting out into the sea like a hook for about 5 miles. It is caused by drift-sand which, brought by the current, accumulates with wonderful rapidity, and causes all the river-mouths of the east and north-east coast to be blocked, or forces them to tend towards the south. From Wembets to Shiretoko Cape the coast is almost impassable. The Shiretoko Peninsula is of volcanic formation, and on Raushi Volcano accumulations of sulphur are found. Owing to the ruggedness of the coast, and the lack of a safe harbour, the cost of freight would be too heavy for the profitable working of the mine. There is a pass from Shibets to Shari (37 miles) across the peninsula over the range of mountains. It is a long day's journey, among forests of birch-trees, maple, oak, and mountain-ash. The north-east coast of Yezo has nothing attractive in any way. It is as desolate as a coast can well be, and everything that Nature could think of to make travelling uncomfortable can be found between Cape Shiretoko and Cape Soya, treacherous swamps, quicksand rivers, stinking, decayed vegetable matter and seaweed, innumerable horse-flies and mosquitoes, scarcity of huts and food, everything in fact which makes life a burden was at hand here. Abashiri (one hundred Japanese houses, fifteen Ainu huts) is the settlement of most importance on this coast. It has a peculiar cylindrical island and a bold volcanic, rocky headland jetting into the sea, which at first sight resembles basalt. The portion of the coast between Shari and Abashiri, and between this place and Mombets, is very swampy. Large lagoons are formed by the rivers, the outlets of which have been blocked by the sea, and they are a continuous danger to the wayfarer. The Abashiri Lake, the Notoro Lake, and the Saruma Lake, are the three largest. The Saruma is about 20 miles long and 7½ miles wide. It is separated from the sea by a

row of sand-hills and a long strip of sand. Its outlet into the sea has been forced to the south-east by the drift-sand travelling in that direction from the north-west. The rush of water in and out of the lagoon is very strong. Seals and mallards are numerous in the vicinity of these lagoons, and banks of large oysters are found in the Saruma Lake itself.

Besides these lagoons there is nothing very noticeable from a geographical point of view, and the riding is more and more monotonous every day along the sand-hills until Poronai is reached. Here again we have volcanic rocks as far as Esashi, then mezozoic in approaching the Soya Cape. There are no anchorages to speak of in all this long stretch of coast, and the climate is extremely severe in winter. About the end of December drift-ice sets in from the north and gradually fills up all indentations in the coast, forming a solid mass which extends for 8 to 10 miles out at sea. A lighthouse has been erected on Cape Siliusi, near Soya. Between Cape Soya and Cape Nossyap is a large semicircular bay, then the coast-line turns sharply south. Wakkanai (September 20th), on the Nossyap side of the bay, is a growing settlement in this outlandish part of Yezo. All communication with Southern Yezo is done entirely by sea, as the western coast is, if possible, even more inhospitable than the north-east. The volcanic islands of Rishiri and Repunshiri are visible from Bekkai; and Rishiri, 6000 feet high, looks majestic, rising as it does at this great height directly from the sea. There is a trail joining Wakkanai to Bekkai; then, along a coast strewn with wreckage, I moved slowly southward. This wreckage is partly of ships which have got wrecked immediately here, partly of others which the strong current has drifted and left on that coast, previous to entering the narrow La Perouse Strait between Yezo and Saghalin.

As the river-mouths on the north-east coast tend southward so those of the west coast tend northward. Even the large Teshio River, which carries an enormous body of water, works in the same general direction. It runs southward parallel to the sea for several miles, and then forms a small lagoon, the mouth of which tends to the northward. The Teshio River is very broad and deep, but unfortunately the sand bar at its mouth prevents crafts from entering it. The coast-line which as far as here is sandy altogether changes its aspect. We have high cliffs of clay, and a narrow slippery beach most unpleasant to travel on.

From Tomamai the coast begins to be more inhabited by a shifting population which migrates there during the herring and salmon fisheries. Rumoi, Onishika, and Mashike are but a long string of fishermen's huts along the coast. I was unfortunate enough in wading the Mashike River, swollen by the heavy rains, to be carried away by the current and to break my right foot. With the help of two men I was

carried over the Mashike mountain (3800 feet), a steep and difficult mountain trail, and after many days of painful travel, partly by canoe, partly on horseback, I reached Ishikari. It seemed a pity now that I had nearly completed the whole circuit of Yezo and been up the most important rivers, that I should leave the upper Ishikari unvisited, and though I was suffering the most atrocious pain from my accident I would not be beaten.

Previous to my moving eastwards, however, I may mention that at the mouth of the Ishikari is the village of Raishats, where a tribe of Saghalin Ainu were imported by the Japanese Government when the southern half of that island was exchanged with Russia for the Kuriles. The Ishikari River is of great importance, as the autumn salmon fishery, though carried on with primitive methods, gives large returns, the river at that time of the year being simply thick with fish.

The banks of the Ishikari are mostly of alluvial mud. For about 5 miles from its mouth it lies in a southerly direction, the next 12 from west to east, and then for 40 or 50 miles the winding course has a general direction of north-east. It then bends towards the east up to its springs. The Sorachi on its east side is one of its largest affluents, and from here one strikes the new road, made by convict labour, leading to Kamui-kotan and then to the Chupets valley. Here the site for the future capital of Hokkaido, in the very heart of Yezo, has been chosen by the Japanese Government. It will go under the name of Kamikawa.

The Kamikawa plain is 342 feet above the sea-level. When I visited the future capital of Northern Japan there were but five houses, two of which were inhabited by the convicts employed to continue the road leading across the island to Abashiri on the north-east coast. Hundreds of hands were at work, and the road was progressing rapidly.

To my idea the resources of the small Kamikawa plain will hardly be sufficient to support a large population; in fact, I believe the Government half thought of abandoning the project of having their new capital so far inland.

I returned to Sorachi, and from there by a wide, but badly-kept road, in which my pony sank to its belly in mud, I struck directly south for Poronai or Ishikishiri as it is also called. Between Poronai and Sorachi at a place called Otaussi-noi the road branches off; and at a distance of 10 miles are found some rich coal-mines which had then newly been opened. The Poronai coal-mines are well-known, and I shall not speak of them. They are joined to Sapporo by a small railway, which then continues to Otaru, the shipping port. The railway was being continued to the new mines, and eventually, I believe, it is to be carried on further.

Sapporo, as you all know, is the present capital of Hokkaido, and the Government has spent much money in starting industries, farms,

colonial militia settlements, and opening roads, but unfortunately their enterprises have not been supported by private capitalists, so that many a well-started scheme has already fallen flat.

From Otaru I followed the north coast to Yoichi and Kawamura and then went across the Shakotan peninsula by the mountain track to Iwanai, and the Iwao Nobori volcano (3374 feet above sea-level). Slowly travelling along the coast in a south-west direction, I reached Barabuta, but from here the trail became so bad that no ponies could get through, and I, in the miserable condition in which I was, and not being able to walk, had to return north-east to Shitzo, and from there take the road south to Oshamambe across the peninsula. Once again on Volcano Bay the travelling became more easy, as there is a fairly good road round the bay between Oshamambe and Mori, passing through the small villages of Kunnui, Yurap, Yamakushinai, Otoshibe. Between Yamakushinai and Mori the road is very good. Instead of returning to Hakodate *viâ* the lakes, I followed the coast in a south-east direction, and passed the hot springs of Obune, Kakumi, and Isoya, previous to reaching Esan Volcano (1740 feet) and the Cape of the same name. Sulphur accumulations are found near and around the craters of Esan. The mineral is of very pure quality. From Cape Esan the coast turns to the south-west as far as Toi, then again to the north-west to Ishisaki and Yunokawa, after which one comes to the Hakodate isthmus and peak. Having taken a day's rest at Hakodate, I travelled to Esashi by the well-built road, one of the few fit for wheeled vehicles which as yet have been made in Yezo. The distance direct from Hakodate is 57 miles, and it took me sixteen hours in a wretched cart to accomplish the distance. I visited the part of the coast north of Esashi which I had not gone through before up as far as Cape Ota, and then returning to Esashi proceeded south along the coast to Ishisaki, Eramachi, Nepta and Shirakami Cape, the most southern point of Yezo. North-west of here is Fukuyama or Matsumae, the old capital of Yezo. This west coast of the southern peninsula of Yezo has no harbours. Fukuyama itself to the south is a little more protected than any place along the coast between Cape Ota and Hakodate, but it also is far from being a safe anchorage. I then returned to Hakodate, after one hundred and forty-six days from the day I first left it, having accomplished the whole circuit of Yezo, and having been up all its largest rivers.

According to Japanese maps the journey which I took would be over 5000 miles, but from my own notes I do not think that I went over more than 3800 miles. This distance was almost entirely ridden on horseback, and, what is more, on a pack-saddle.

My cruise to the Kuriles is not included in this estimate of distances. From the day I broke my foot to the day I reached Hakodate was a space of fifty-eight days, during which I was with no medical assistance whatever except my own, and I can assure you that riding on horseback

with a "broken bone" is anything but a treat. However, I had to do it, rather than be forced to spend the whole severe winter in a small fishing village, where I am sure I should have succumbed to cold and loneliness.

Having thus given a brief and very imperfect sketch of my journey, I shall say farewell to you with the Ainu compliment "Popka-no-okka yan," which, translated into English, means, "May you be kept warm!"

After the reading of this paper, and that of Professor John Milne on his journey in Yezo, the following discussion took place:—

Mr. Meik: I have very great pleasure in complying with the President's request to speak about this island, always called in this country Yezo. Of course the Japanese now call it Hokkaido, but Yezo is not even the proper original name, it ought to be pronounced as if spelt Ezo. Mr. Landor has referred to Mr. Blakiston, the first European who has left any record of his travels in Yezo. There is no doubt that Captain Blakiston has been over pretty well most of the ground covered by subsequent travellers. Captain Blakiston, in addition to being a very skilled and accurate observer, was also an enthusiastic naturalist, and has left behind him writings to this Society's Journal and those of various American societies, containing full accounts of birds, animals, and numerous other matters relating to Yezo, and I think this country and the whole world owes a tribute to him for what he has done in Yezo. At the same time I quite allow that there is ample field for further exploration, and I am glad to hear that my friend, Professor Milne, has taken up the work commenced by Captain Blakiston. I resided for three years in the island in the service of the Japanese Government, and had both to go round the island to fix upon suitable sites for harbours and to explore its rivers with a view of developing communications. I travelled all round Yezo and gave very full reports; but unfortunately the Japanese are not very wealthy, so practically nothing has been done since I was there as to developing the island, with the exception of the Sorachi-Mororran railway, which has been made in the last three or four years, the railway to Poronai having been made ten or twelve years ago with a view to develop the coal-mines. I often came across the Ainus in my travels and never had any difficulties with them. Perhaps it was that my Japanese friend, who was also a great friend of Captain Blakiston, and knew the country thoroughly, always suggested saké, for which the Ainu has a strong liking, and which smoothes all things and makes travelling easy. Mr. Landor made reference to the fogs on the south-east coast; these are very prevalent in summer, and are so thick that on the coast you cannot see 20 yards ahead, but one mile in the interior you are quite out of them. They are entirely local and are caused by the cold current setting down from the Behring Straits, past the Kuriles along to Cape Erimo, thence to Kinkusan on the Japanese main island. This current is 20 miles wide, and is, as a rule, 12° to 15° colder than the rest of the sea. The consequence is that seaweed, known to the Japanese as *Kombu*, flourishes luxuriantly and is a great article of commerce, being exported into China; it grows as long as 90 to 100 feet. It is used in China and also Japan as an article of diet, and is very nutritious. I would point out that a warm current, a branch of the Kuro-siwo, sets through the Straits of Tsugaru and meets this cold one east of Cape Erimo, then turns off to the Pacific. These warm and cold currents are rather complicated, and I only mention it to account for the fogs. A salt-water lagoon lying at the upper end of Akkeshi Bay is filled with oysters, sometimes as much as 18 inches long on the shell; two or three furnish a good

meal for the European. While there I obtained a tin of them, as preserved for the Chinese market, sent them home and was accused of trying to poison the whole family. The Chinese like them high, and the Japanese, to meet the taste, preserve them in rancid oil, which gives them a very unpleasant taste. Mr. Landor has referred to Kamikawa as the future capital. I don't think the Japanese will ever make this the capital of the island, as the present capital, Sapporo, has already a population of fifteen to sixteen thousand. If it is moved at all it will be to Hakodate, the largest commercial town in Yezo, and the only town open to Europeans in the island. Travelling, I may remark, is not unpleasant; it is a pleasant climate in the summer-time, with only sand-flies and horse-flies, which you must put up with in every unopened country more or less. Professor Milne makes a remark about the timber in Yezo being worth an enormous sum. It is very true that the island is covered with a great deal of timber, but I think not of so great a value as he makes out. No doubt there is some fine timber, but that on the coast is not of much value. It is only that grown on the higher lands that is of any marketable value. At elevations of over 800 feet first-rate pine timber is met with, which is very useful. The Ishikari is the biggest river in the island and discharges more water than any other river in Japan; the other two rivers of any consequence are the Tokachi and Teshio. The Ainu has been described as hairy; so he is as compared with the Japanese, but not compared with European races. The average Englishman has just as much hair on his face if he allows it to grow, but the Ainu has no barber or hairdresser to trim his flowing locks. I think the greatest authority on the Ainu question is the Rev. John Batchelor, a missionary of the Church Missionary Society, who has done more than any other man for the tribe, and has contributed papers to the Asiatic Society of Japan with regard to them, and published a dictionary of the Ainu language. If any of the audience are anxious to follow up this matter you could not do better than refer to his writings.

Professor Perry: I have been three times in Yezo, but never further north or east than Sapporo. I lived in Japan a number of years in intimate relations with Professor Milne, and I have been with him over some parts of Yezo, but nothing that I can say would add to the Society's information concerning the island. To those who do not know Mr. Milne I would say that he is an indefatigable observer as a physicist, meteorologist, geologist, botanist, and entomologist, and when he commits himself to a statement, it may be relied upon as having received most careful consideration. I should like to ask the last speaker, when he said that the late Captain Blakiston had been over pretty well the whole ground described in these papers, did he mean that Professor Milne's paper had not described new ground? It is to be understood that I have the highest respect for Captain Blakiston's work and feel very grateful for his kind hospitality, but I should like to know whether it is not true that what is described in Professor Milne's paper had not been described before. I think he would not have sent a paper to this Society which had not something very new in it. At all events I feel sure that Professor Milne is the first to describe the country one sees in the interior of Yezo, say, in crossing from Yubets.

Mr. Meik: I think Professor Perry is right; Captain Blakiston never went across from Yubets or from Ishikari. He went as far as Kamikawa. I do not, in making these remarks, wish to take away from the credit due to Professor Milne, and I quite agree with Professor Perry that anything he writes may be relied upon as accurate, and it was far from my intention to detract from Professor Milne in anything I said about Captain Blakiston.

The President: If no one will continue the conversation I think there is

nothing for me to do except to say that I am certain you will wish me to thank all the gentlemen who have provided so much entertainment for us to-night. Mr. Savage Landor has struck into a very different line of work from his illustrious grandfather, but I am sure he has shown enough energy to be worthy of his name. Both Professor Perry and Mr. Meik have contributed very much to our information. To each and all of them you will desire me, I think, to return your best thanks. I may remind the Society that Captain Blakiston, who has been so often alluded to to-night, received the patron's medal in the year 1862 from this Society, chiefly for his great survey of the Yang Tse River.

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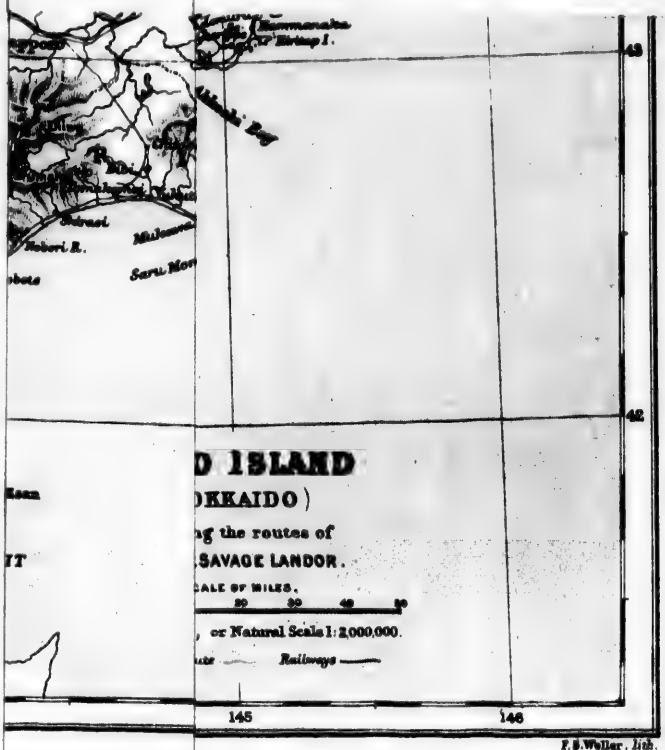

F.S.Weller, lith.

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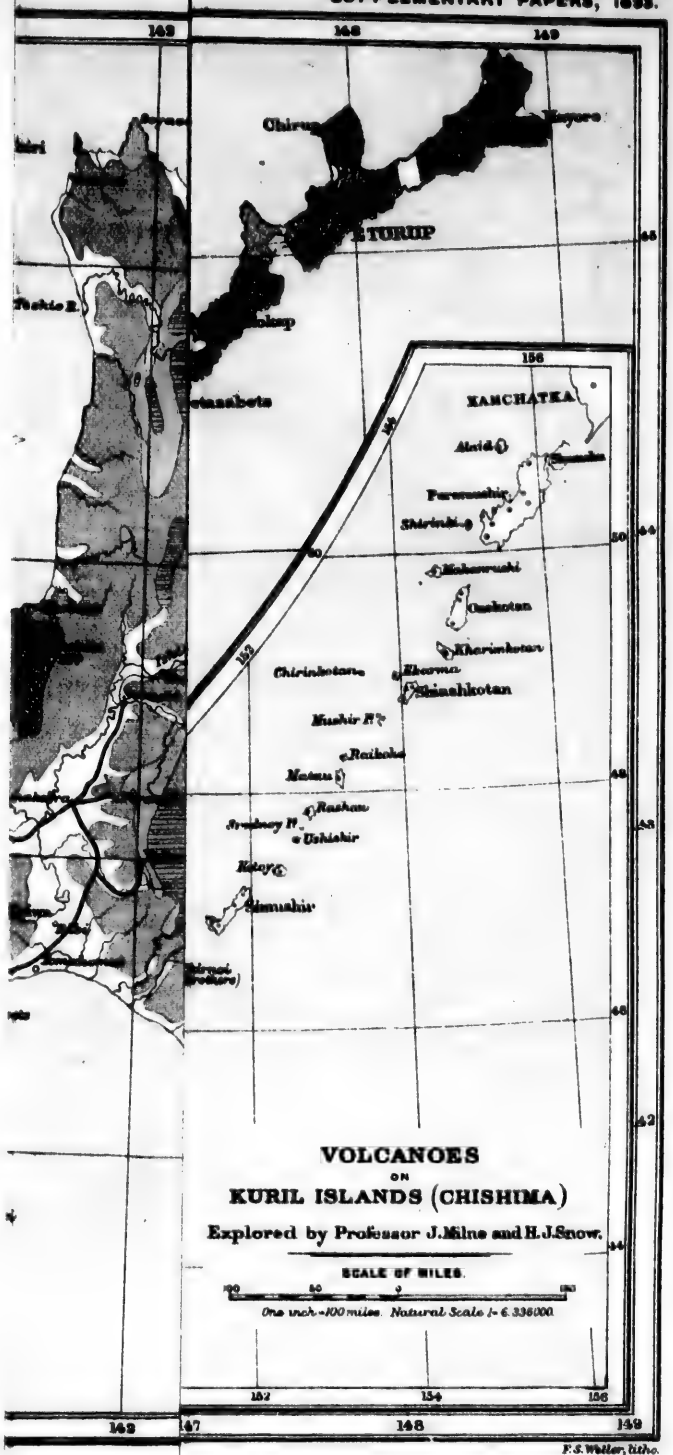
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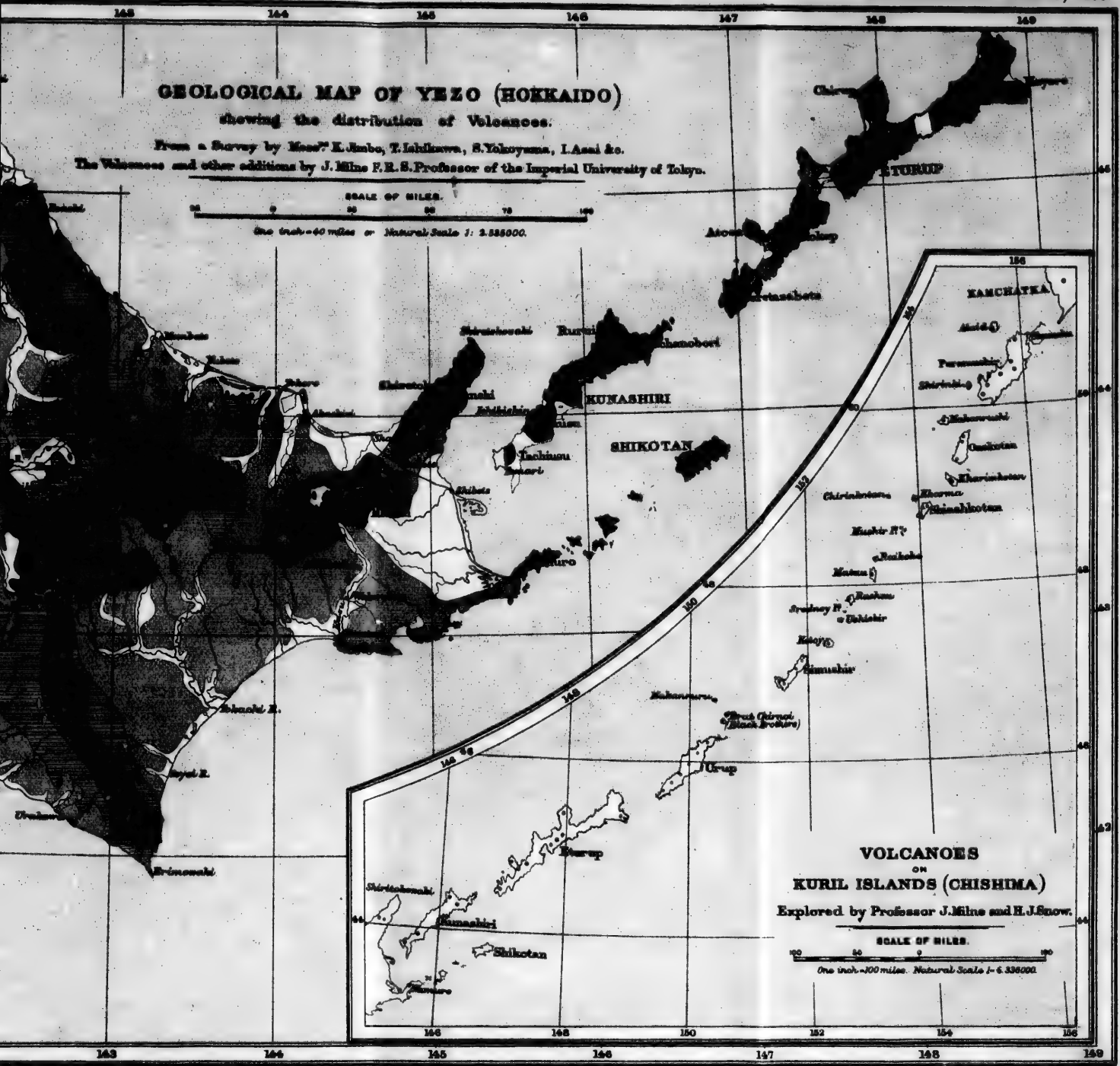

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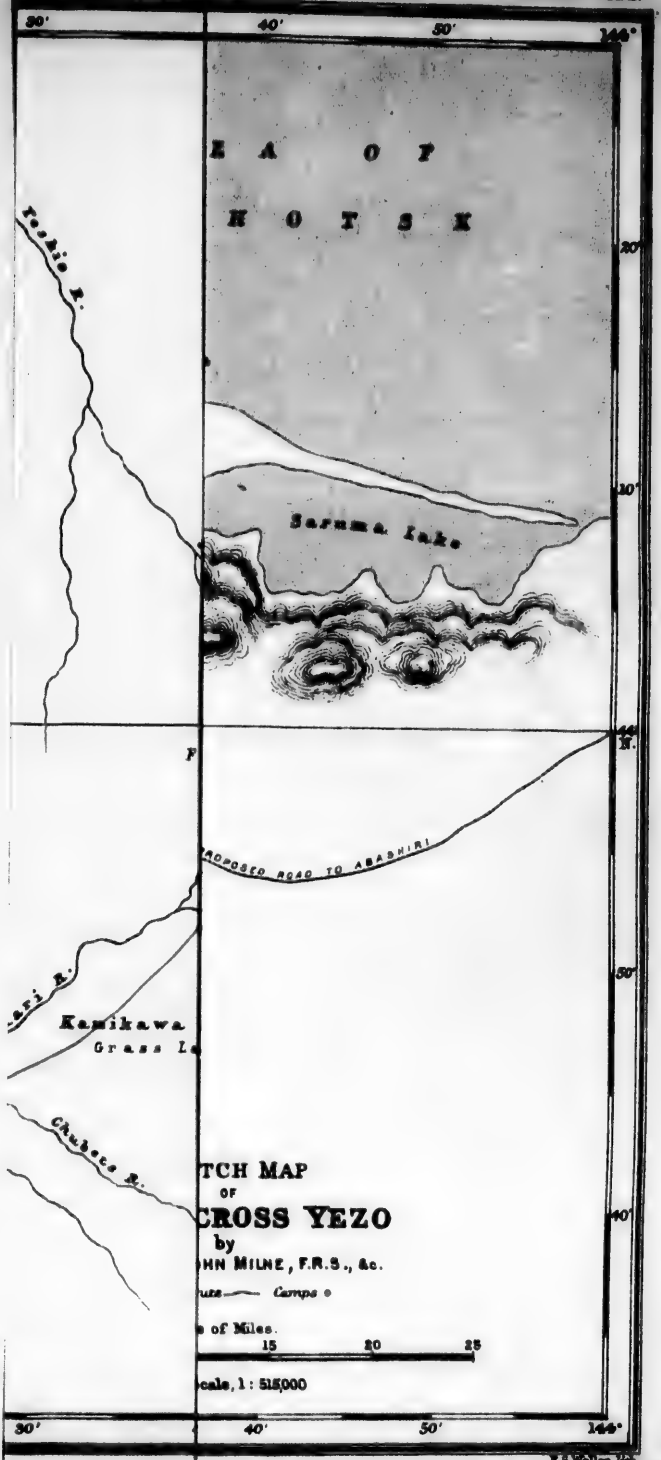
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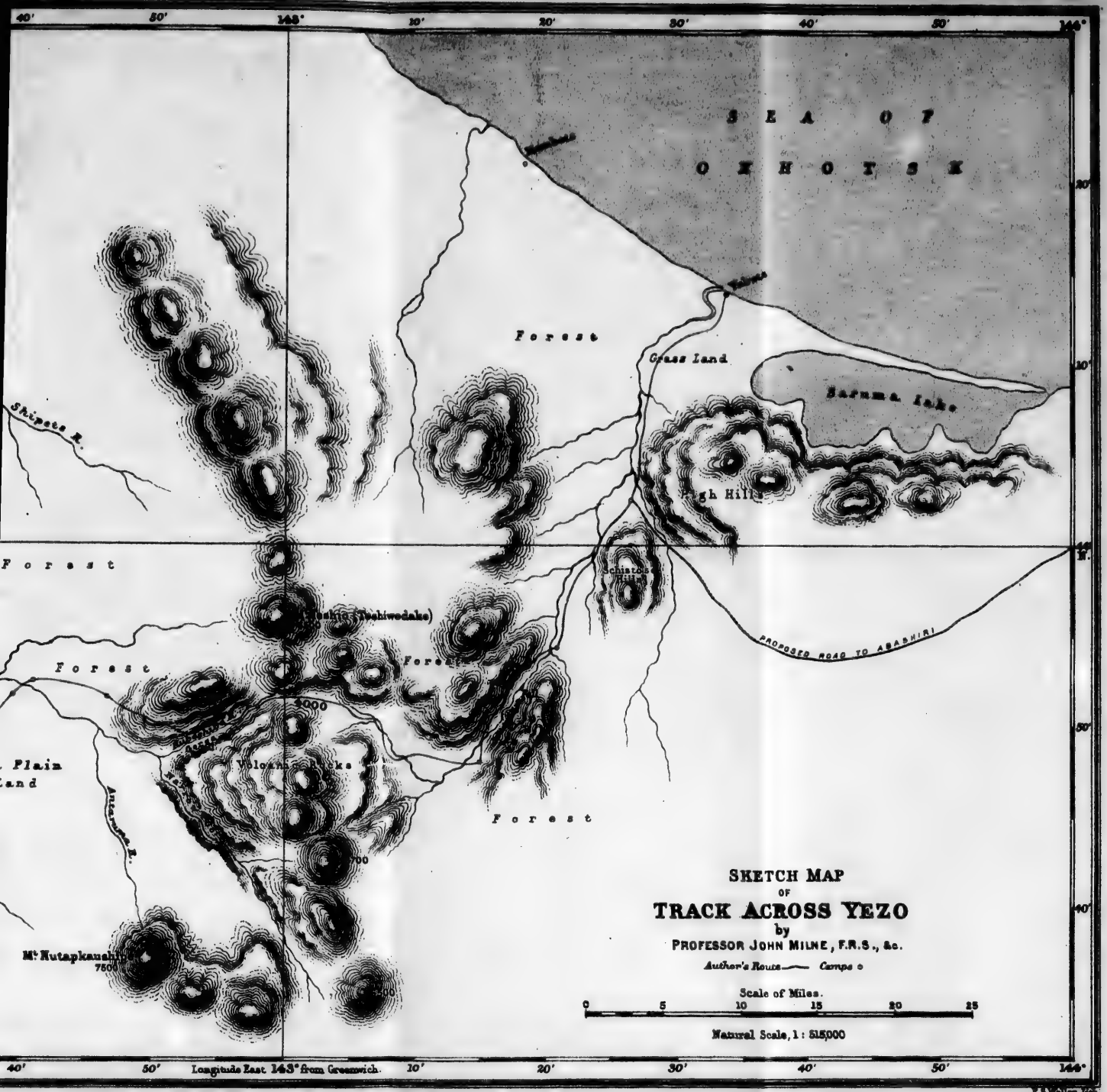

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F.S. Walker, lith.

VOL.

EXPEDITION

TO THE

NOGAL VALLEY.

BY

Lieutenant E. J. E. SWAYNE.

WITH MAP.

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EXPEDITION TO THE NOGAL VALLEY.

By Lieutenant E. J. E. Swayne.

Map, p. 560.

In January, 1891, my brother, Captain Swayne, R.E., and myself, were directed to make a reconnaissance into the Horn of Africa, with a view to obtaining a fuller knowledge of the main caravan trade routes into the interior, and also in order to determine roughly the tribal limits of the Habr Toljaala and Dulbahanta tribes of Somalis.

In making a preliminary sketch-map of our proposed route, we discovered, from native information, that we would be going into the country Speke once attempted to reach, and consequently we hoped to discover the Nogal Valley, about the existence of which he and other travellers had heard so much from the coast Somalis. Since Speke's expedition, an account of which is to be found in Sir Richard Burton's 'First Footsteps in East Africa,' no further efforts had been made to reach this district.

We reached Berbera towards the end of January, 1891, and at once began our preparations for a three months' journey, collecting men, camels, and food to form a caravan. It had been decided that the escort should be composed of Somalis only, and that no Indian troops should be employed, as the expedition would be required to penetrate to tribes not before visited by Europeans; tribes who were known to have a rooted dislike to natives of India, and who were said to be of uncertain temper.

Thirty Somalis were therefore engaged as camel-leaders. They were armed with long Snider rifles, roughly drilled, and taught to shoot. Two of these were selected to act as head-men, various duties being assigned to each, and the services of a caravan-leader were obtained, to be over all.

Care had been taken that some of the men engaged should be men belonging to the tribes we were likely to meet, and the Political Resident at Berbera lent us the services of two elders of tribes, to act as guides, and be generally responsible for the safe conduct of the caravan. One of these men was a Habr Toljaala, and the other an Arasama Dulbahanta. Both did everything they could to help us; and although

there was at times a little jealous friction between them, we on the whole got on very well together, and parted great friends.

A Somali interpreter, speaking English and Hindustani, had been sent us from Aden; but being a town man, he was very suspicious of the intentions of the inland tribes, and not unfrequently communicated his nervousness to the men. Most of our men knew something of Hindustani, and we generally conversed with them in this language, and presently picked up sufficient Somali to be able to get along fairly well with such people as we met on the way.

We discovered when too late that three of our men were Hajis—that is, men who have made pilgrimages to Mecca; and these men, having each considerable influence, divided the camp into three rival factions. They had separate prayer-meetings, and constantly quarrelled with each other. It is a good thing to have one Haji in the camp, as he will lead the prayers, and if a good preacher, will attract at sunset all the tribesmen who happen to be grazing their flocks in the neighbourhood, thus giving the expedition prestige. Sometimes two or three hundred men would be performing their devotions in a long double line in front of our tents, the preacher intoning the service standing well in front of the centre of the line.

Thirty desert camels were purchased at a cost of about £2 10s. a-piece, and also the necessary camel-mats and ropes.

These mats are made by the Somali women by chewing strips of the bark of a kind of acacia thorn-tree called Galol. The frayed-out strips of bark are woven into a mat, so as to leave long soft tags on one side of the surface. Two of these mats are placed one on top of the other over the hump of the camel, and are lashed firmly on with ropes made of aloe fibre or raw hide. Two long stakes are then lashed one on each side in the form of a V, the point of the V being tied together above the hump, and the ends of the stakes bound together beneath the belly of the camel. The load, carefully divided into two equal portions, is then lashed across the stakes on each side. In rainy weather, when the camels are unloaded, the stakes are planted in the ground and tied together, and the mats thrown over them, thus making a round, brown water-tight hovel, called by the natives Gurgi. Certain camels were told off to carry water only.

For this purpose we bought a number of hans—grass-woven vessels—made water-tight by a coating of mutton fat. These vessels, which also are made by the women, are very elastic, and not so liable to be broken as others. They will hold about two gallons of water each; but the grease gives an unpleasant taste to the water, which, however, we were obliged to get used to, as we sometimes had to go for several days without finding a well.

Two months' supplies were laid in, such as rice, dates, clarified butter; also bales of American and Indian cloth, to be used as presents.

Amongst other instruments we carried a theodolite, carefully packed in a deal box, and swaddled in pieces of camel-matting. We thus carried it safely for about 2000 miles, during this and two subsequent expeditions.

Starting from Berbera in the middle of February, we crossed the stony plain called Guban in two days, and climbed up to the Sheikh plateau by a difficult pass. This part of the Golis Range is about 35 miles from the coast, and can in clear weather be easily seen from Berbera, as can also a bluff called Gan Libah, further west, and a mountain called Wagger, 30 miles to the east.

The tomb at Sheikh is situated on the highest point of the caravan road to the interior, and the Golis Range rises on both sides to an elevation of about 6000 feet—grassy and well-wooded, with cedar trees and euphorbias, with a fair supply of water, the constant abode of various sub-tribes of the Habr Gerhajis and Esa Musa, who here find grass for their flocks and herds all the year round.

Seen from the coast, the range presents the appearance of a line of blue rocky bluffs following the general direction of the coast-line, sometimes approaching nearer to the sea, and sometimes retiring further inland—the barrier between the hot stony maritime plain, called Guban, and the cooler and pleasanter upper plain, called Ogo, which slopes gently down to the interior, and merges into the Haud waterless plain.

About 4 miles to the west of Sheikh begins a line of towering cliffs called Fudwein, which is continued westward in a succession of bluffs to Gan Libah (the lion's hand), some 40 miles distant. Further westward the range gradually sinks, and melts into the maritime plain which rises to meet it, and is there called Ogo Guban—the word meaning a country between Guban and Ogo.

About 30 miles to the eastward of Sheikh is situated a well-wooded mountain called Wagger, divided up into a number of peaks, the highest of which is about 6800 feet above sea-level. Between these peaks are fertile valleys, splendidly-wooded slopes and broad pastures, supporting herds of sleek cattle.

Over the Sheikh Pass lies the most direct road for caravans coming to Berbera from the Habr Gerhajis tribe; but owing to the difficulty and danger of bringing laden camels this way, many caravans prefer to go round 40 miles to the Miria Pass, a much easier though longer road. The Sheikh road was some years ago put in order by an English engineer officer, who blasted up some of the more difficult places; but since then the rain has washed down many boulders and broken away the road in not a few places, and the natives were now anxious that we should do something towards putting it in order again, as many baggage camels were now lost yearly, and water-hans, etc., destroyed.

The Sheikh plateau, on which stands the tomb from which it takes its name, consists of plain red soil, and is in one place cultivated by a

village of mullahs, or priests, who have lived here from time immemorial. Their camel-mat huts are pitched amongst some ancient ruins, surrounded by a high and thick thorn fence—a defence against lions and looters. The latter, however, generally leave mullahs alone, unless hard pressed for food.

Wherever cultivation is carried on in Somali-land, it is done by the mullahs, who alone enjoy comparative immunity from molestation at the hands of the marauding bands which constantly wander about the country. There are very few of these settlements in the land, and they are generally separated by a 100 miles or so of thorny acacia shrub. Near the tomb there is a large ancient graveyard, containing some 5000 graves; and the place is reputed very holy, being one of the first strongholds of the Arab sheikhs who came over from Arabia and intermarried with the Galla women; and having thus founded a powerful tribe, drove the Gallas every year further into the interior. The work is still carried on by the various Somali tribes, which are descended from the early Arab settlers, who, they boast, were near relatives of the Prophet.

Having selected one of the bluffs of Fudwein from whence we should be able to take observations on Berbera, we left the heavy baggage in charge of the priests, and, climbing up by a roundabout way some 1500 feet or so, we reached the summit, and camped at the edge of the cliffs, which here fall sheer 1000 feet down to a continuation of the Sheikh plateau, called Mirso—a high ledge running round the foot of the cliffs, much cut up by ravines and covered with thorn jungle. All around us were fine cedar trees and euphorbias; the former, however, appeared to be too much twisted to be of much use as timber. A short distance back from the edge of the cliffs there were long grassy glades, the soil being plain red alluvial, and the ground generally sloping gently down towards the interior. We were unable to take satisfactory observations for nearly a week, as it rained frequently and the sky was overcast; but at length we saw Berbera lighthouse, distant 35 miles, glimmering white through the theodolite telescope, and obtained azimuths and latitudes. Thus we fixed the first point in our chain of positions. An azimuth also was obtained on to a hill called Yirrowa, 45 miles distant in the interior.

Our method throughout of fixing positions was by means of azimuths and latitudes, both being determined by numerous stellar observations, the sextant being worked at the same time as the theodolite. The general direction for 150 miles was S.E.; and the country after leaving Golis being very open, and the atmosphere clear, and distant peaks well defined, we found no difficulty in carrying a chain of azimuths as far as we went; but on our direction changing to east, we were obliged to zigzag a little to fix points by triangulation, and were finally obliged to make a departure due south to the edge of the Haud Desert, in order to fix Bur Anod and Shile Madu, two mountains in the Nogal district.

After which, on our return journey, we had plain sailing again to a point near Karam, and then worked westward by means of latitudes and azimuths on Wagger Mountain, which had previously been fixed from Berbera and Fudwein. Heights were worked out by aneroid, barometer, and thermometer readings, checked by boiling-point thermometer. Arrangements were made for having simultaneous observations taken at the coast.

Up to the time that we reached the Dulbahanta country—that is, for about 150 miles—although we sometimes at night heard men shouting in the distance, I do not think we met more than 200 men, the country on our line of march being much dried up for want of water, as the Dair, or short rains, had failed, and the tribes had driven their flocks to better grazing-grounds in the mountains. Our men were at first much in fear of raiding parties, and there were constantly scares by day and by night; but as they became more confident of themselves, there was presently very little confusion, every man going quietly to his place, and remaining on the alert.

After crossing the Golis Range, we entered the Tug Dehr Valley, and leaving Burao on our right, marched to the wells of Ber, distant from Fudwein about 50 miles, our way lying through thick thorn jungle, everything being very dried up, and no water to be obtained until we reached Ber. Generally, wherever we passed over a waterless country we were enabled to make longer marches, as no people were met with on the way, and so there was no inducement to stop, even had the limited supply of water carried in our hans allowed of it.

We did not go to Burao, where we might have got water, as it was slightly out of our way, and we did not wish to be delayed by the Burao people, the Habr Gerhajis, as they would expect presents; and we required all we had for the Dulbahanta and Habr Toljaala people. On making a night bivouac about 5 miles from Burao, however, we were visited by a number of horsemen, who showed us the usual equestrian exercises, and demanded cloth. Besides these men, we met no others up to the time we reached Dabr Dalol, some 40 miles S.E. of Ber, excepting stragglers returning from what they said were unsuccessful searches after stolen camels. Although we thought ourselves far from any tribes, yet it was just in this plain that our men most anticipated attack, partly because the country was entirely new to most of them, and partly because it is just in these desolate places that looting generally takes place. Also, we were gradually nearing Bur Dab, a blue hazy mass of hills, becoming more distinct and bolder as we advanced—the reputed rendezvous of a large band of robbers recruited from the Musa Abokr, Sad Yunis, and Mahmud Gerad, three very turbulent sub-tribes inhabiting the country 150 miles east of Bur Dab. As we neared this mountain we crossed the fresh tracks of a large body of horsemen deeply imprinted in the red powdery soil; and many were the discussions

the sight of these hoof marks gave rise to amongst the men. At night men shouted to us from the thorny jungle that they would attack us.

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The latter next day actually came into collision with a large party of robbers just after a Somali caravan, which happened to be passing at the time, had been looted, and some thousands of sheep captured. The robbers, who were composed of spearmen and slingers, attacked so boldly, that it was, unfortunately, found necessary to open fire on them to drive them off. The sheep that had been looted were abandoned by the flying robbers, and returned to the owners.

Our Aden men, born and bred in a town, some of whom had never been outside one, were terrible scaremongers, and often infected the rest, and were with difficulty prevented from firing on occasional men seen roaming about in the bushes near the camp; but with the exception of one or two hopeless ones, by the time we reached the Dulbahanta country they had lost their fears, and on a sudden alarm at night would get to their places and kneel there quietly, ready for orders. So much so, that often the only sign of uneasiness would be the sudden jumping to their feet of our camels, and on our going outside the tents we would find the men kneeling in a circle round the camp with rifles ready, not a word being said.

On our return journey we visited Bur Dab, and examined the wells, and also went on over the tops of the bluffs; but we found no robbers there, and subsequently, after our return to Berbera, we heard that the robbers had quitted on our approach, for seeing our tents, they thought we were the same party with whom they had come into collision, and so withdrew.

The rock, in some places more than 1000 feet above the plain, commands a view of the whole country 70 miles around, and men were said to be constantly on the outlook for passing caravans, and to raid at a distance of 50 miles. The looters were supposed also to send out spies to examine the ground in the vicinity of the wells of Ber and elsewhere, and to follow any fresh caravan-tracks they might there find, returning to inform the robbers.

Bur Dab generally divides the Habr Toljaala from the Dulbahanta country, and all caravans to Berbera must pass either on one side or the other; thus the looters, sometimes three hundred in number, obtain much booty, and only vacate the place when caravans have been frightened off the regular routes, and taken to the long and tedious Haud Desert journey, where they must carry a ten days' supply of water, none being obtainable on the way.

Having thus completely paralysed all trade, the looters return to their several tribes until such time as a return of confidence on the part of traders holds out a prospect of further booty.

They are generally all young men, who, having got tired of the

inactivity of home life, band themselves together, and come to Bur Dab for two or three months in the year, and there live on the camels, sheep, and goats which they are lucky enough to capture from passing caravans, every now and then organising a distant raid on some hostile tribe. They return to their families when rain has fallen, and the young grass gives prospect of fat sheep for food, and a life of ease after the hardships of a period of outlawry.

So much for the robbers. Raiding is always carried on between tribes at feud with each other; but trading caravans are, as a rule, respected, except by these Bur Dab robbers, and the Jibril Abokr on the west. Hostile tribes, carefully avoiding each other, and on the alert after a recent raid, gradually become careless, and leave their camels and flocks in charge of women and children, whilst the men sleep and dawdle; then the more enterprising tribe collects its horsemen, and they, taking a supply of dried meat on the saddle-bows, ride off in the night, surprise the enemy's flocks, and, killing such men as are in the way, drive off the animals before the hostile tribesmen have had time to assemble.

If pursued, the captured sheep and goats are left to fall into the hands of their rightful owners; but the camels are driven on at great speed into the mountains, and then all chance of recovery is gone.

Looting horses will often go for two or three days without water, and we hear of five thousand camels being captured in this way at one swoop—a valuable prize, worth, say, £12,000, to be divided amongst the lucky spoilers. When the raid has been arranged by horsemen combined with men on foot, the share of the horsemen is always twice as large as that of the others.

Feuds between tribes vary in intensity according to the number of men that have been killed, and the manner in which it has been done. It is a point of honour with a tribe not to be satisfied until an equal number of the enemy has been killed; and the feud is carried on from generation to generation, after the Corsican method, until the tally is correct.

Thus, if a single man of the enemy is met with at a desert well, his life is not to be despised, and he is mobbed and murdered, and the score reduced by one. Tribes, however, get very tired of this sort of thing, and a price of seventy camels per man has been fixed upon as blood-money; and if both sides are willing, the feud is settled by the side having the greater number of slain receiving seventy camels for each man who is killed in excess of the enemy's dead. Since the British have occupied the coast, the tribes have been encouraged to accept our arbitration in these matters; and many settlements have been made, sometimes, however, to be broken over some dispute in connection with the quality of camels paid as blood-money—some being too old, others too young, etc. We have now a settled price of 700 rupees to represent the fine of seventy

camels. Good camels would actually be worth more than three times that amount, but in cases of blood-money a nominal value only is paid.

When a private murder is committed, the murderer must either be handed over to the family of the murdered man, or else the tribe must fight for him, and arrange payment of blood-money. If the murderer is a "good man" (that is, if he has murdered many others, and looted many camels), the tribe refuses to give him up, and fights for him; if he is not a "good man," he is handed over, and methodically led out to have his throat cut.

The Dulbahanta, like other large tribes, are split up into many sub-tribes, and these again into smaller sections and families. They generally occupy the Nogal Valley, which we entered after leaving a place called Kirrid. Nogal is the name given to the whole district comprising the Ain, Tug Dehr, and other valleys. In the centre of this district Bur Dab, Bur Anod, and Shile Madu are masses of rock forming islands in the broad Nogal Valley. The hills are generally composed of trap-rock; but gypsum is found in the valleys; and all the wells are sunk in this, the water being very foul, partly owing to the sulphuretted hydrogen latent in the water, and partly owing to the surface scum which drains into the wells after the departure of the flocks and herds which have been watering there during the season when grass has been abundant in the neighbourhood. We suffered much from bad water, as some of the wells we drank at had not been used for a long time, and were consequently very foul. The water in the wells becomes fairly sweet after flocks have been drinking from them for some days, as the bad water becomes exhausted, and a fresh supply filters in. Most of the wells have been quarried out of the rock by the race of men said to be Gallas, who inhabited the country prior to the Somali invasion, the latter disdaining to dig any wells except with his hands in soft sand. The sub-tribes have each their own separate pastures and watering-places, and will not drink at each other's wells unless on terms of intimate friendship. With such thousands of camels, goats, sheep, and ponies, the watering has to be done very methodically, different hours for this being allotted to different families. The men descend into the wells, say, 20 feet down, and water is passed up from man to man in skin buckets, and poured into skins arranged in the form of basins with sticks, and propped up by stones. The herds are then driven up to drink, and driven off again to give place to others. All the time the men engaged in the wells are singing songs, and others sing and whistle encouragement to the camels. The white gypsum rock in the vicinity of the wells is ground into dust by the continual passage of beasts, and is glaring, and very trying to the eyes. At sunset all the beasts are driven off, and collected by families inside thick thorn fences; fires are lighted, sheep killed, and songs and dances kept up until a late hour. The position

of each sub-tribe is marked by thirty or forty brown zerebas, inside which camel-mats, rigged up on sticks, afford shelter to the women and children.

The Dulbahantas had never before been visited by Europeans, and were very suspicious of our intentions. We were therefore obliged to remain at some distance from the wells until they had finished watering, as they suspected us of designs of poisoning the water. Tribute was often demanded under the name of "presents," and it is difficult, with so many sub-tribes, to carry sufficient cloth to satisfy them. Our only plan was to find out which was the most powerful, and depend on them for choking off the others. Thus we got on fairly well with most of them, though they all expected more, and tried the effect of demonstrations to impress us; but there were only one or two men of any note of whom we had any reason to complain.

At Badwein, in the centre of that part of the Nogal Valley which is occupied by the Arasama sub-tribe, we discovered extensive ruins of an ancient city, and close by a large tank quarried out of the gypsum rock. The deserted ruins covered an area of about 40,000 square yards, choked up with cactus and aloes, the haunt of leopards and hyænas. Most of the houses have been reduced to mounds of stone and rubble, covered with straggling mimosa bushes, but here and there the walls of houses were better preserved. We rode into one house, whose walls stood some 10 feet high, and found it divided into many partitions, the building being in the form of a parallelogram, with sides 200 feet long and 100 feet wide. Curious niches here and there would seem to have been used as fire-places.

Seeing these things, we listened with respect to the Somali legend of a civilised people who had long passed away before the onset of the savages whose guests we now were. The Somalis said this civilised people cultivated all the lands around, and occupied large cities, that they could read and write, and that when their (the Somalis') fathers came to the country, many buildings bore traces of writing which had long since been worn away by the work of time. They called the people "Harli," and said they were there prior to the Gallas. The latter had dug the rocky wells at Kirrid which we saw on first entering the country, and had cut a rude Christian cross in the face of the cave—the only ancient sign existing of a rude form of Christianity in the land. We tried to decipher what was said to be writing on the pillar of a doorway; but it was impossible to make out any letters, as the surface of the gypsum stones, of which all the houses were built, had become much decomposed by the action of rain, and looked spongy, like pumice-stone. We rode with our party of Dulbahantas in amongst the ruins, out of one house into another, and, standing on high heaps of *débris*, let our eyes range over a landscape dotted with crumbling grey walls imbedded in clumps of aloes and cactus. As we picked our way among the fallen

blocks, we disturbed a herd of deer feeding inside the remains of an old building, and everywhere guinea-fowl, of the species called vulturine, scuttled out of our path. We wished much to dig amongst the ruins for ancient pottery, etc., but were prevented from doing so by the suspicion and prejudice of our hosts, who consider any tampering with these places as sacrilegious. There were many old graves, some of which seemed to be built in the form of a cross; they were plastered over with a mortar composed of pounded gypsum and water. The Dulbahantas now make their graves in the same manner, only Moslem in design; always in the vicinity of water, as certain rites, for which water is necessary, have to be carried out. In some cases dead men are carried, strapped on camels, long distances in order to be buried near water. We much wished to remain some days and explore this dead city, but various sub-tribes of Dulbahantas were very uneasy and suspicious of our intentions, so we thought it advisable not to prolong our stay. They could not understand why we roamed about in desolate places instead of accepting the hospitality of their wandering camps, where the whole place was infested with camel-ticks; and having seen us working the theodolite, they credited us with designs of presently bringing an army to take the country. They dissuaded us as well as they could from proceeding to the out-of-the-way peaks we had fixed upon as points of observation, and placed many obstacles in the way, assuring us we should be attacked by savage tribes, and that we were going into a country utterly waterless, that our camels would be devoured by lions, etc. Seeing, however, that we went all the same, and discovered water in spite of them, they gave up the attempt, and we were better friends after.

We were obliged to make a departure south from El Dab, as Muyo, the place we intended to go to, and which was said to be on the Toljaala-Dulbahanta frontier, lay nearly due east of us, and so its position could not be determined by means of azimuths and latitudes. This departure south carried us to a stony range of hills bounding the great Haud Desert, and our observations were made on a high bluff called Galfai —the place of the Gallas—where many large cairns spoke of the former occupation of these people.

On our return from this place we examined the tank at Badwein, and found it to be an oblong hole quarried out of gypsum rock, about 120 yards long and 80 yards wide, with perpendicular rocky sides. The water, which was 40 feet from the surface, presented the appearance of a lake of ink, very foul and unpleasant. Ponies and sheep, however, are driven down to drink at a place where one of the sides has fallen in. Thick evergreen bushes flourished in all the crevices, and vulturine guinea-fowl came in long lines in Indian file to drink. We shot some of these birds, and found them very palatable; but the Somalis would on no account touch them, as they never eat birds of any kind. They are very

fastidious also as to eating game, only certain kinds of deer being considered good, and these must have their throats cut in the orthodox Mussulman way, high up under the jaw. We preferred to sever the head from the body low down the neck, in order to make better specimens for setting up; and many of our specimens were spoilt by the men rushing in to the wounded game before we could come up.

At Muyo we were at the eastern end of the Bur Dab Range, having the Tug Dehr Valley, now 20 miles wide, on the north, and the Ain and Shilloli Valleys on the south. The whole district is called Nogal. Bur Anod, the hill which we had heard so much about, was within easy reach of us, and very distinct, whilst Shile Madu was easily seen a little further east, and the positions were fixed in our maps. Near Muyo there are a few rocky wells—a bone of contention to the surrounding tribes, situated as they are in debatable land between the Arasama Gerad and the Mahmud Gerad, two Dulbahanta tribes, who have been for a long time past fighting out a blood feud. Raiding parties from both sides water their ponies here, and we actually met a party of Arasama horsemen, who had just come back 70 miles from an unsuccessful attack on the Habr Toljaala tribe. We now and then on our march saw knots of horsemen on the brows of the hills, and in some cases they would charge up to us to try to throw the caravan into confusion; but on seeing us undisturbed, they would pull up when a short distance off, and parley, and demand cloth. Muyo was the furthest point of our journey, and we turned back thence on our return journey by another route to Karam, having penetrated well into the Nogal district. We marched back to Badwein, and thence through thousands of camels of the Arasama and Barkad Gerad to El Dab, where we made some parting presents, and then struck off to the northward, accompanied by a large native caravan, which wished to take advantage of our protection past the northern end of Bur Dab. Our way for a day's march lay amongst stony hills and up a thorny valley, until we reached the summit of a low range which separates the Habr Toljaala from the Dulbahanta country, and is here called Laba Gardai (two views). We then descended on the other side to the Tug Dehr Valley, and, turning to the left, marched to the wells of Arreged, situated in a cleft between two bluffs of Bur Dab, and said to be the headquarters of the robbers. We had thus in coming and going made a complete circuit of Bur Dab. Although we were disturbed at night by spies, we were not attacked, and completed our observations without hindrance. We ascended a high bluff of Bur Dab about 1000 feet above camp, and found that the hill was composed of trap-rock, the inside falling away to a basin tunnelled in all directions by caves, said to be inhabited by robbers whenever they come here. The regular stratification of the rocks and the general formation did not seem to warrant the assumption that this basin is the crater of a volcano, as stated by some travellers to the Italian Geographical Society. The

natives told us that no Europeans had ever been there before. It is possible that the word Bur Dāb, meaning a rocky hill, was mistaken for Bur Dab, meaning a hill of fire, or a volcano.

The native caravan we had been escorting left us at Arreged, and went on to Berbera, *via* the Miria Pass, to Huguf. The merchandise consisted of gum arabic, myrrh, frankincense, hides, and ostrich feathers, also a number of fat-tailed sheep; and after disposing of these at Berbera, the natives intended bringing back cloth, dates, and rice. Most of the thorn trees in the Dulbahanta country produce gum arabic, and clear transparent knobs could be seen sticking on the naked branches. The inside of these knobs is fluid, and sweet to the taste, and the Somalis eat great quantities; but only when near water, as they require to drink much at the time.

Bur Dab itself is chiefly noted for its myrrh. Caravans do not generally go to Berbera from the interior, except at a certain season, when rain has fallen near the coast, and the maritime plain, at other times almost devoid of vegetation, is covered with tufts of short grass, and the mimosa bushes are in leaf. Then the tribes in the vicinity camp about the town itself, and caravans come in from the interior. The goods are stacked in a stone enclosure under the control of Customs officers, and the camels are driven out into the plain to graze.

The tribes immediately around Berbera demand tribute from other tribes sending caravans through them, and the tribute has been fixed at so much a head per camel, and is, under the present arrangement, paid into the British Customs, to be subsequently divided amongst the elders of the coast tribes. There are two roads chiefly used by caravans from the Dulbahanta country to Berbera; one is *viâ* the Sheikh Pass, and one is *via* the Miria Pass, the latter being by far the better, and although much longer, it is, as a rule, preferred to the shorter but more precipitous Sheikh road, where camels often come to grief. Also, the road *viâ* the Miria Pass only passes through the Habr Toljaala country—a fairly peaceable people; whereas the Sheikh road passes through the Habr Yunis and Esa Musa, the former being frequently at war with their neighbours or amongst themselves. Both these roads are commanded by Bur Dab, as caravans must either pass to the south by Kirrid, or to the north by Arreged; and the more inland trade is effectually stopped when this mountain is occupied by a large number of robbers. The latter are recruited from several sub-tribes, the Musa Abokr, Sad Yunis, and Mahmud Gerad, who all occupy lands to the east of the Miria road, stretching up to the sea, and so are enabled to cut in on the lines of march of caravans. The Habr Toljaala are a powerful tribe, and make it a point of honour that caravans shall have safe passage through their country, and they receive a part of the dues for this purpose. When this tribe is down in the maritime plain, however, the looters come up to Bur Dab and raid all around. In the summer, when the Habr Toljaala

come up to the cooler and more grassy country about Bur Dab, the Mahmud Gerad, etc., raid all along the maritime plain, and have been known to loot all the camels off the plain immediately around Berbera, and carry them off to the mountains before they could be pursued.

The Habr Toljaala say they have much more trouble keeping the roads safe than the Esa Musa, who live immediately around Berbera, where the British occupation keeps looters at a distance, and so they now demand a larger portion of the dues.

A camel corps has now been raised at Berbera, composed of Somalis, equipped with Snider rifles, and properly drilled by the Political Resident. The camels of this corps were imported from Arabia, and were supposed to require jowary for food; and consequently, in order to supply this want, a stimulus was given to the cultivation of jowary at the Dubar wells, where are the gardens of Berbera, distant 7½ miles. Water is brought in pipes from Dubar to Berbera, where it is collected in tanks, the whole being the work of the Egyptians before our occupation. The Arab camels are in the rainy season daily driven out into the plain to browse on the low mimosa bushes; and although new to this kind of food, they have soon become used to it, and thrive so well that there is now no danger of the supply of fodder ever running short, sufficient jowary being easily raised to supply the camels' food during the dry season. Jowary is grown in the interior wherever mullahs, or priests, have settlements, they only being fairly secure from molestation.

On a subsequent expedition we visited the largest of these settlements, the only inland village in Somali-land before reaching Faf, on the Webbe. It is called Hargaisa, and is surrounded by extensive jowary crops. The soil here is generally plain red alluvial, topped with a fine layer of sand, the same exactly, and not a bit better, that we had seen stretching for more than 100 miles down the course of the Tug Dehr and other valleys. Rain is continually falling at all seasons on the elevated Golis Range, which shuts out the stony maritime plain from the elevated interior; but as we retire from the hills we only have rain at certain seasons. One season is called Dair (the short rains), the other being called Gu (the big rains). It was the season of the Dair rains when we started from Berbera; but they failed, and the country we passed through was much dried up, the soil being powdered and driven in clouds by the wind as it was knocked up by the camels' feet.

The highest mountain we ascended in the Golis is called Wagger, and is about 6800 feet high, and inhabited by the Mahamed Esa, a sub-clan of the Esa Musa, not on very friendly terms with the Habr Toljaala owing to a dispute anent road dues. On this mountain many fat cattle wandered knee-deep in grassy glades, and there were flowers everywhere, and birds sang in all the trees. The trees, chiefly cedar and euphorbia, in some cases grew to a height of 100 feet, and I measured one cedar

which was over 21 feet in circumference at the base. There are also some high hasadan trees, a species of euphorbia, from which exudes a white fiery fluid, producing, when manufactured, a kind of gutta-percha. Elephants had tunnelled paths through the thick forest right up to the summit of the highest peak, called Tawawur, and following one of these paths, we easily ascended the mountain, and presently emerged out of the gloom of the interlaced trees on to the summit, where lay a large split boulder. Kudu could be heard crashing through the underwood, and from a valley down below came the voice of a panther. A cloud presently enveloped us, and after waiting some hours to try to obtain observations on Berbera, we were obliged to return to camp in a grassy glade between the two main peaks of Wagger, called respectively Bakawa and Tawawur. A thunderstorm burst on us during the night, with torrents of rain; but a sunny morning followed, and again ascending to the top of the mountain, we were enabled to take the necessary angles. On this mountain, as on Fudwein, water is fairly abundant, and during the winter months the temperature is all that could be desired. In April the temperature in the shade on Wagger varied from 68° Fahr. at night to 75° in the middle of the day. Wagger is about 45 miles from Berbera, and is reached by an easy road passing through the Daga Mahalable gap in the maritime hills.

There were many karias of the Mahamed Esa scattered over the mountain, and numbers of chubby children were playing about amongst the calves. The whole population live entirely on milk, sheep, and an occasional cow. The men were very civil, and assured us that they were not troubled by raiders, who usually swept past the foot of the mountain, not caring to trust their ponies on the broken ground of the mountains. Most of the looting is done by horsemen, and consequently the tribes which keep most ponies are generally the greatest raiders, as men on foot are unable to drive off the booty sufficiently quickly.

Before closing this paper, I would like to say something about the Haud. This is a broad waterless plain beginning at the Abyssinian frontier, near a peak called Moga Medir, and running eastward, gradually widening until it reaches the south of the Dulbahanta country, where it is over 200 miles broad. During this journey we skirted its northern limits near Galfai, and during two subsequent journeys we reached points on its northern boundary further westward at Toyo and Moga Medir. The western portion of the Haud, called Bun, west of Toyo, is a grassy plain without a bush on it, separating the Jibril Abokr and Gudabursi Somalis from the tribes under Abyssinian domination—the Bertoré, Giri, and others. The plain, which consists of red alluvial soil, is here about 30 or 40 miles wide, soon increasing in width, however, as it is continued eastward, so that between Hargaisa and Milmil it is over 100 miles broad. Further to the east the ground loses its prairie character and becomes rolling, and covered with broad-crowned mimosa

bushes. The Haud, although uninhabited at other times of the year, during the rains is the pasture-ground of nearly every tribe, both on the northern and southern side of it, nearly every tribe having a right of way into it, and returning after the rains to their own side of the Haud. Thus the Haud effectually separates the northern Somalis, the Habr Awal, Habr Gerhajis, Habr Toljaala, and Dulbahanta from the Ogadeyn and Berthore tribes, lying on the south of the Haud. Most of the Ogadeyn tribes trade with Obia and the south coast of the Horn, belonging to the Italians, but a few of the tribes nearest the Haud send caravans across to Berbera. When we were at Muyo we received an invitation from the Mahamed Gerad Dulbahantas to come and see them. They said they would kill camels and sheep for us and feast us, and professed much friendship. We were not able to go, however, as we had come to the end of our provisions and presents, and had to return to Berbera. Had we gone we should have struck a point of the Haud further east than Galfai. We were told that after rain the grass grew so high and became so tangled that the only way for men to get from one part to another was by following the lanes made by the camels as they wandered about feeding.

The Haud is a noted haunt of lions; we saw several on the western side, and heard many tales of their ravages in the Dulbahanta country. The lions are, by the natives, supposed to require no water, but to suck the dew from the grass in the early morning, and they told us that often on cutting open lions which had been killed, grass was found inside them. We actually shot two lions at least 30 miles from water, and I sat for two nights near the only water-hole for 30 miles around, and although we once or twice heard lions, they did not come to drink. The Haud swarms with game, especially springbok, hartebeest, and ostriches. Thousands of antelopes may be seen feeding knee-deep in grass, looking in the distance like long brown strips, and it is easy to shoot as many as are required. The Bun, on the west side of the Haud, seems just suited to ostrich farming.

Attached are lists of latitudes and longitudes; also of barometrical and thermometrical readings.

Large revised maps of the whole of Somali-land are now in progress, and the results of this journey will be entered on them.

A genealogical tree of the Dulbahantas has also been made out.

MAP TO LIEUTENANT SWAYNE'S PAPER.—The map illustrating this paper has been constructed from the observations and report, accompanied by a sketch-map prepared roughly on the journey, sent to the Royal Geographical Society by Lieutenant Swayne; the coast-line from the Admiralty chart of the Gulf of Aden (No. 6 B.) 1888; and the country around Berbera from a map of the Habr Awal country compiled by Lieutenant Swayne, scale 3 miles = 1 inch, Poona, 1887.

List of Latitudes and Longitudes.

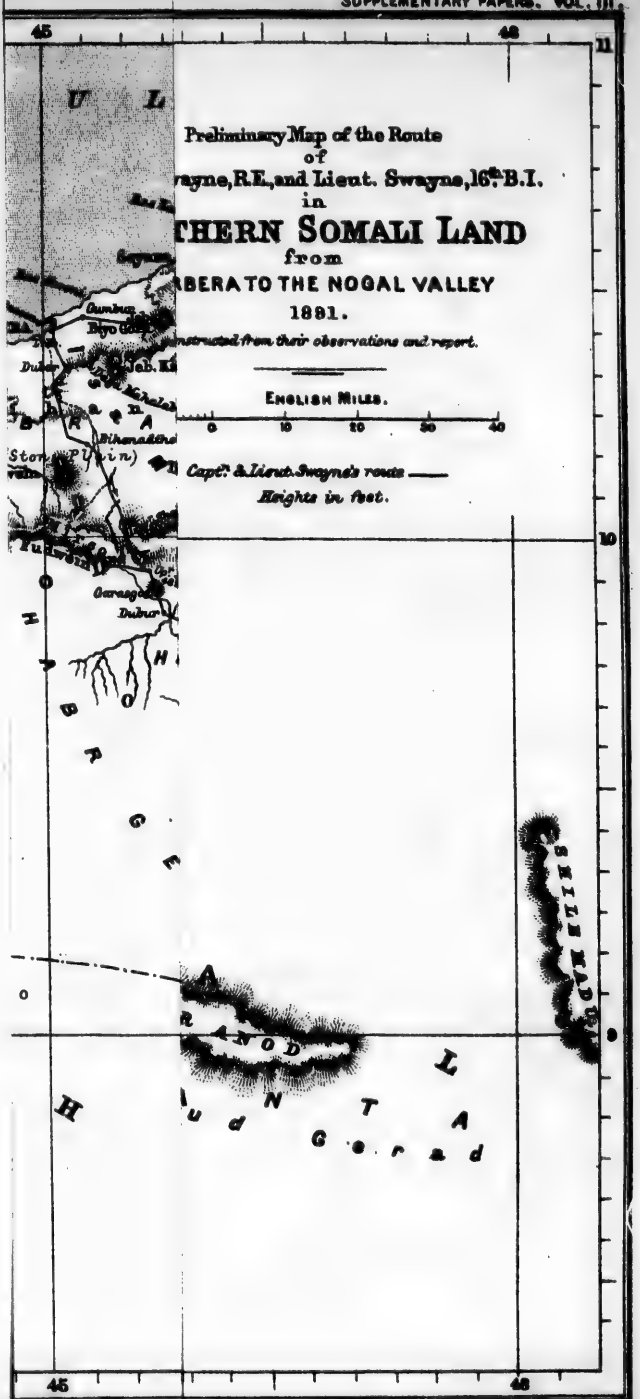
I.-III.—By Capt. Swayne, R.E., and Lieut. Swayne, 16th Bengal Light Infantry. The longitudes are determined by azimuths and differences of latitudes; altitudes by aneroid, corrected for diurnal range, and referred to Berbera. IV.—By Capt. Paget, R.N. V.—By Mr. Hooper, H.M. Indian Marine Survey.

—	Altitude.	Latitude N.	Longitude E.
	Feet.	° ′ ″	° ′ ″
I. February to April, 1891.			
Berbera—Pier (from Chart)	..	10 26 24	45 0 39
Musjid	30	10 26 1	45 0 49
Residency	..	10 26 7	45 0 52
Sheikh, Lower	2800	9 59 44	
" Upper	4698	9 56 18	
Fudwein	6374	9 57 28	45 5 34
Garasgoe	..	9 53 46	45 12 41
Dubur	..	9 51 20	
Yirrowa, East	3324	9 24 45	45 43 51
Ber	3215	9 19 48	
Shilleli	3366	9 2 52	46 0 26
Kirrid	3214	8 58 33	46 8 58
Dabr Dalol—Top	..	8 57 20	46 19 44
Camp	2945	8 57 18	
Warda Magoi	3773	8 54 29	46 18 0
Shela Oro	2697	8 55 18	
Kabr Ogaden	..	8 56 17	46 27 58
Gumbur Salmo	3333	8 51 21	
Biyo Addo—Camp	2856	8 42 40	
Top	..	8 42 38	46 35 19
Hagr Agoler	3133	8 53 59	
Muyo—Camp	3102	9 4 55	
Top	..	9 4 53	46 48 22
Laba Gardai	..	9 5 0	
Arreged—Camp	3733	9 8 30	
Top	4940	9 8 26	46 12 20
Waridad	3168	9 17 8	
Lascal—Camp	3730	9 53 35	
Top of rock	4849	9 52 40	45 51 46
Hugnff	2080	9 56 49	
Dufleho—Camp	1929	9 59 45	45 48 44
Karingabili	1893	10 8 4	
Jid Arho, A.	..	10 20 14	45 48 49
" B.	2305	10 20 18	
Tawawur Peak—Summit	6819	10 2 57	45 25 54
Gadki Gobleh	40	10 41 35	45 42 38
Karam	2	10 50 29	
Gola Midik	70	10 46 40	
El darad	..	10 43 44	
II. May to July, 1891.			
Gan Libah	5929	9 52 52	44 47 28
Naso Hablod—On neck	4680	9 34 58	44 6 16
Bohol Gibeli—Hill	..	9 42 47	
Yuffun—Camp	4945	9 42 54	
Elephant rock	5116	9 43 4	43 39 26
Egadin Hill	..	9 55 9	
Sikoba	4601	9 55 57	
Hug, Lesser	4216	10 1 49	
Hill	..	10 2 1	
Mirid	2992	10 6 40	
Darinlibi	3056	10 11 25	

LIST OF LATITUDES AND LONGITUDES—*continued.*

——	Altitude.	Latitude N.	Longitude E.
	Feet.	° ′ ″	° ′ ″
Karima Goraiyu	2410	10 9 20	
Kudkuduha—Camp	2256	10 8 35	
,, Turki—Hill	..	10 7 16	
Bulhar, P.	15	10 23 6	44 25 58
,, (Chowki)	..	10 23 6	44 25 59
III. September to October, 1891.			
Damal	3925	9 41 52	
Aw Boba	5097	10 4 30	
Lasmaan—Stone zeriba	1956	10 44 52	42 51 28
Hemal	1744	10 33 35	
Aligilla	1969	10 27 10	
Alimaan	3022	10 15 34	
Darinwada	2082	10 26 39	
Fulla, Lower—Second camp	1395	10 49 45	
,, Upper	1649	10 45 12	
Büh-gor bag	1822	10 47 42	42 54 3
Zaila Residency	..	11 21 0	43 28 20 *
IV. Habr Gerhaji's country.			
Warren	..	9 36 4	
Upula	..	9 21 22	
Burao	..	9 30 39	45 35 40
Aumug'g'a	..	9 25 51	45 39 42
Suria ganza	..	9 20 3	
Balheeli	..	9 8 13	
Bohordli	..	9 6 14	46 6 5
Garahrho	..	8 54 12	
Cour Barri	..	8 47 3	
V. Jibril Abokr country.			
Jebel Eemass	..	10 17 52	
Taranah	..	10 10 52	
Biji	..	10 9 57	
Garas	..	10 7 51	
Dadeinba Ged Lasged	..	10 7 27	
Hug	..	10 1 44	
E Lehlao	..	9 53 15	
Harg'aisa	..	9 32 37	
Jalele	..	9 44 56	
El Demet	..	9 50 35	
Alelahloe	..	9 54 17	
Dehradowanley	..	9 57 0	
Setowar	..	9 59 37	

* Longitude calculated from Efat Island, as given on chart, viz., lat. 11° 29′ 36″ N. long. 43° 27′ 13″ E.


Preliminary Map of the Route
of
ayne, R.E., and Lieut. Swayne, 16th B.I.
in
THERN SOMALI LAND
from
BERA TO THE NOGAL VALLEY
1881.
nstructed from their observations and report.
ENGLISH MILES.
0 10 20 30 40
Capt.n & Lieut. Swayne's route
Heights in feet.
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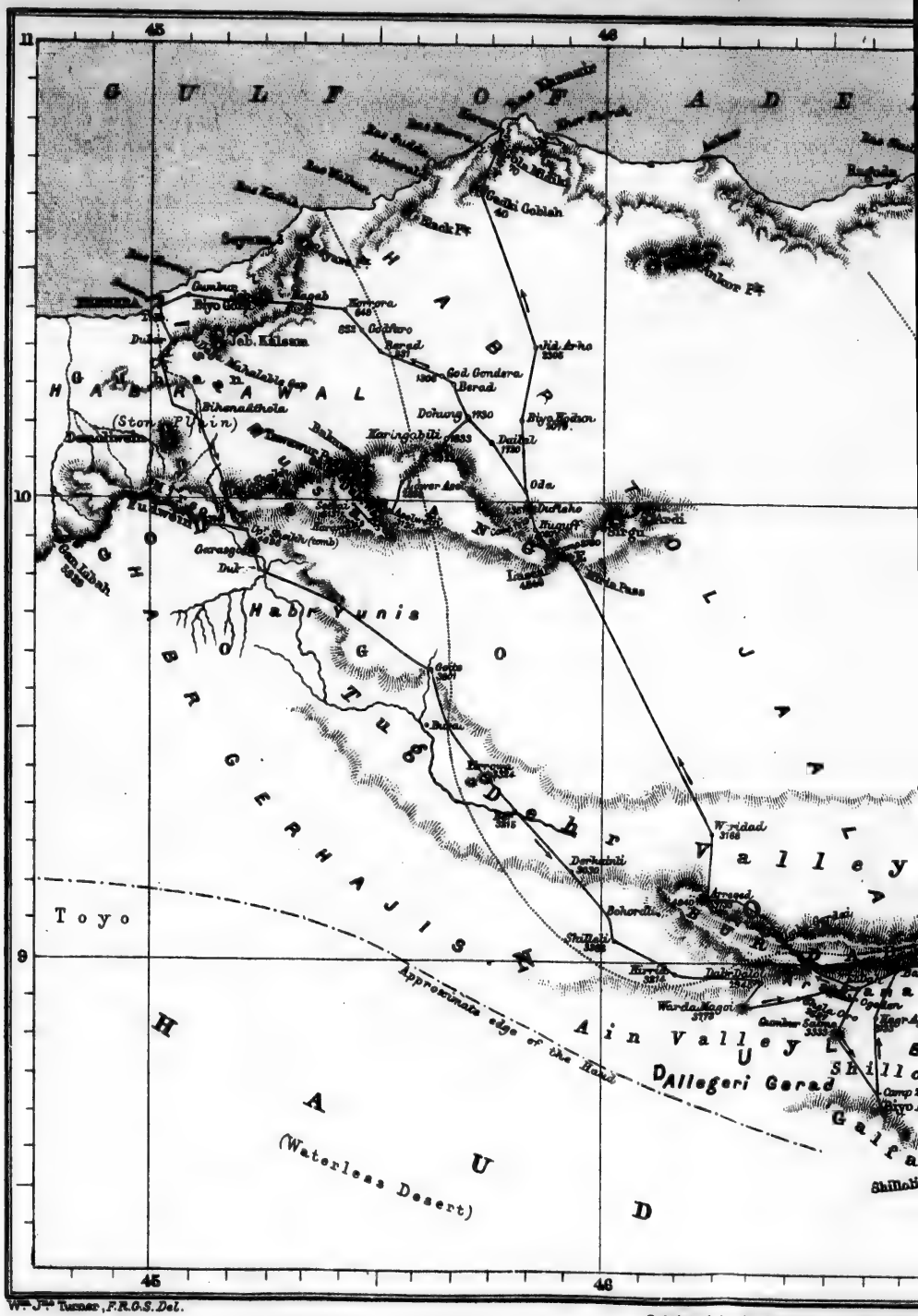
Turner & Shaws; 43 Brewer Street, London, W.



Wm. Jno. Turner, F.R.G.S. Del.

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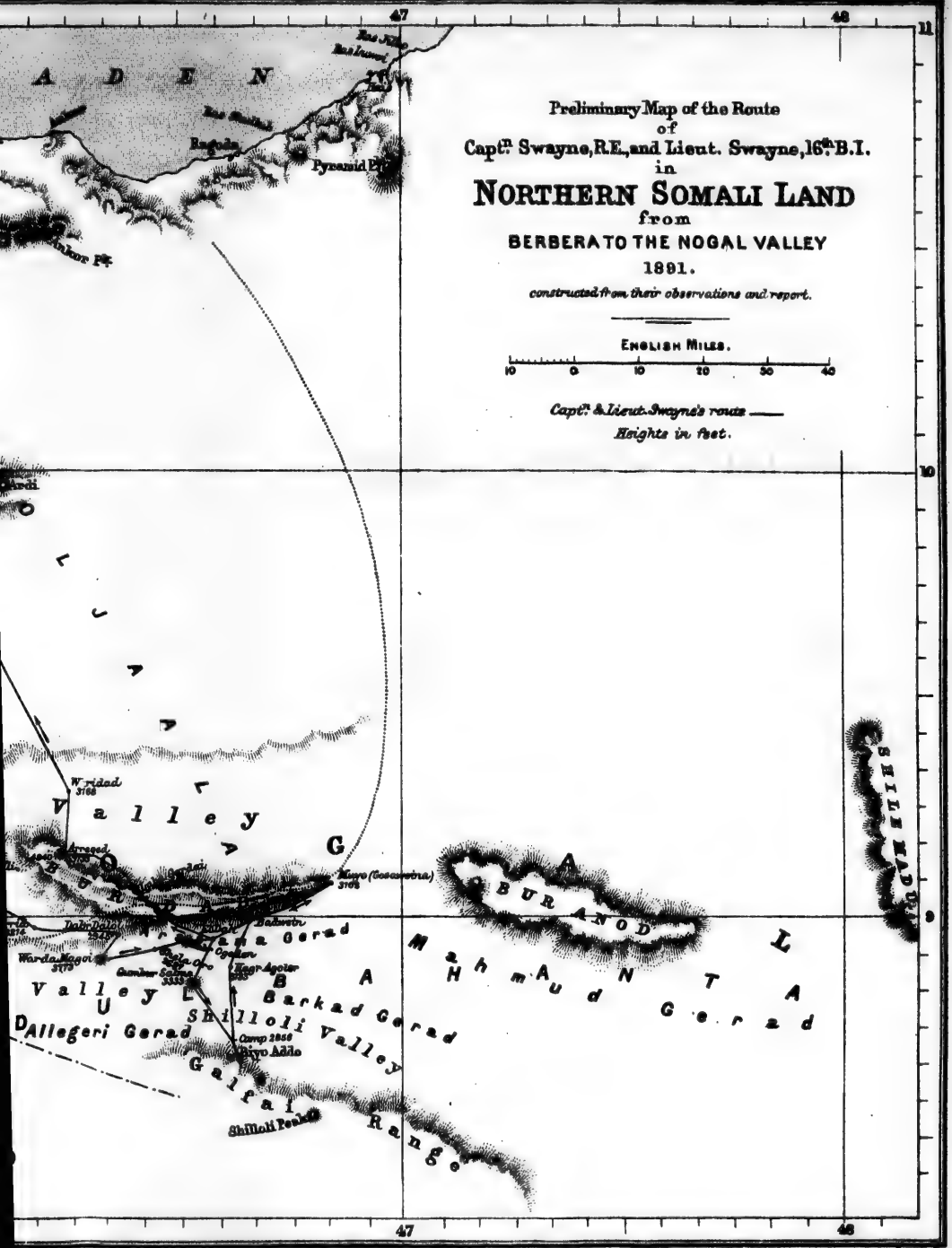

Published by the Royal Geographical Society, 1893.

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THE SIYIN CHINS.

BY

Major F. M. RUNDALL, D.S.O., 4th Gurkha Rifles.
(Late O. C. Chin Hills, and Political Officer, Northern Chin Hills.)

WITH MAP.

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THE SIYIN CHINS.

By Major F. M. Rundall, D.S.O., 4th Gurkha Rifles.
(Late O. C. Chin Hills, and Political Officer, Northern Chin Hills.)

Map, p. 586.

A short time ago I had the honour of presenting to the Library of the Royal Geographical Society a copy of a small manual I had compiled of the Siyin dialect, spoken in the Northern Chin Hills. This manual,* together with one of the Baungshe dialect, compiled by Lieut. Macnabb, Political Officer at Haka, and published almost simultaneously with mine, are the first attempts, so far as I am aware, at reducing to writing these hitherto wholly unknown languages. But as I believe that, speaking generally, not much is known about the Chin tribes, their country and their customs, I venture in this paper to give what information I can, and I trust it will be found in some measure interesting.

I have been often asked, "Where are the Chin Hills?" and I remember one of my brother officers receiving a home letter while we were serving in that "corner of the earth," in which an aunt of his wrote, "I had no idea you had gone to China." It is, perhaps, needless for me to say that the Chins have nothing whatever to do with China, and have never even heard of such a place. In fact, the tribes in the Chin Hills do not even call themselves Chins, and the word is, I believe, either a Burmese one or of Burmese origin. What it means I do not know, as I am wholly unacquainted with the Burmese language.

The Chins are sometimes confounded with the Kachins. I need hardly say the two nations are wholly distinct, and the countries occupied by them lie very far apart.

Position of the Chin Hills and Lines of Approach.—An idea of the position of the Chin Hills may perhaps be most easily conveyed if I say, that a line drawn from Mandalay to Chittagong passes at longitude 93·45 almost through the centre of the Chin country. The boundaries of the country may be roughly stated as the Manipur valley on the north, the Arakan Hill tracts on the south, the Kubo, Kalé, Myittha, and Yaw valleys on the east and south-east, and the Lushai Hills on the west. To reach the Chin Hills a traveller starting from Mandalay would first proceed by steamer down the Irrawaddy to Pakoko. He would then change into a steamer going up the Chindwin River, and

* Printed and published by the Superintendent of Government Printing, Rangoon, Burma. Price Rs. 2.

travel to Kalewa. From Kalewa he would proceed by country boat up the Myittha River as far as Kalemyo. All the above places are to be found in any good atlas. Arrived at Kalemyo, he would find himself at the edge of the terai lying at the foot of the Northern Chin Hills, and about 30 miles by road from Fort White, which lies nearly due west of Kalemyo. Fort White is our principal post in the Northern Chin Hills; and to reach Haka, our principal post in the Southern Chin Hills, he could either proceed from Fort White by the road which has been recently made southwards over the hills through Tashon Ywama (now Falám) to Haka, or he could go from Kalemyo by country boat up the Myittha as far as Kán, and proceed thence westward to Haka, which lies some 60 miles from Kán.

Geographical Features.—The Chin Hills are, I understand, spurs from the Himalayan Range, which finally disappear in the sea; but I have heard it said that the Andaman Islands are a portion of these spurs cropping up again for the last time out of the ocean. The Chin and Lushai Hills run from north to south in parallel ranges, of which the Létha Range, on which Fort White stands, boasts, I believe, of having the highest peaks. When I was serving in these hills, Kennedy Peak, some 6 miles north of Fort White, was supposed to be the loftiest peak in the Chin Lushai Hills, and its altitude is close on 8800 feet above sea-level. But I am not at all sure that there is not a still loftier one lying 40 miles further north, and called Mwelpi, *i.e.*, big mountain, and which certainly appeared to me to be higher than Kennedy Peak. The Létha range forms the watershed for the Kalé and Kubo valleys on the east, and the valley of the Nankathé, or Manipur River, on the west. This river is called by the Chins, Ngúnpi, *i.e.*, big river, but its average breadth is not more than 50 yards at the outside, and its average depth 6 feet or less, though deep pools are frequently met with. The hills are exceedingly steep and precipitous, the eastern slopes of the Létha Range being clothed with dense primeval jungle, while the western slopes are generally comparatively open, except for scattered trees and long grass which is burnt annually. There are no fine valleys to speak of, for the spurs and ravines run steeply down to the banks of the rivers and streams, and the banks themselves are often precipitous. The beds of the rivers are full of rocks and boulders, and the current is very rapid. The most open and level ground of any extent that I have seen in the Chin Hills is at Haka, where the country partakes more of the nature of downs. The principal rivers in the Chin Hills are the Manipur River and the Koladyne, which is known as the Boinu near Haka. The Manipur River runs south for the greater part of its course, but turns eastward near Tashon Ywama, and runs into the Myittha, which flows northwards. The Koladyne flows south at first, and then turns to the westward into the Lushai Hills. I do not know for certain what course it then pursues. The ranges of hills are narrow

at the top; in some places they deserve the name of razor-backed ranges. They are mostly composed of shale, but I have met with a great deal of rock, though I cannot say of what nature the rock is.

Origin of the Chins.—The origin of the Chins is quite unknown. I believe some people are of opinion that they were aboriginal tribes of Upper Burma, and were gradually forced back into the hills, driving back in their turn the Lushais, who dwelt in the hills now occupied by the Chins; the Lushais retreating across the Manipur River still further into the hills. Others think that the Chins had always been the aboriginal tribes of the hilly districts they inhabit at the present day. The Chins themselves can give no information whatever as to their origin. As the old men amongst them are not venerated or respected, traditions are not handed down from father to son, and I only came across two traditions amongst them. One was, that there was once a great flood on the earth, which drowned everybody except a few persons, who escaped by going up to Kennedy Peak, on the Létha Range. The other was, that a great teacher (Buddhist?) once taught some Chins who had gone to Burma how to write, and gave them instructions, which they wrote on leather (parchment?). On the return of these Chins from Burma a feast was given to welcome them, and, while they were all engaged in drinking, a dog or some rats ate up the leather books. They then wrote all they could remember of the teacher's instructions on wooden books; but the house in which these were kept caught fire and was burned down, and so the wooden books were destroyed. After that no further efforts were made to preserve the instructions of the Laihilpa (teacher), and they were forgotten, and the art of writing perished; and so, the Chins add, this is the reason they have no written language.

Tribal Divisions.—The tribes inhabiting the Chin Hills are numerous, and each has its chief, while every village has its headman. Almost every tribe was nominally tributary to the Tashons when we first penetrated these hills. The tribes are distinguishable from each other by different dialects—some of which amount to different languages—and also by the way in which they wear their long hair. The following is a list of the tribes under the control of the Political Officer of the Northern Chin Hills:—

(*a.*) The Siyins, whose villages are in the immediate vicinity of Fort White, and whose territory borders the Kalé valley.

(*b.*) The Kanhows, who occupy the hills north of Fort White stretching from a village called Walawun (about 10 miles from Fort White) to the high hill known as Mwelpi, which is marked on the last Survey maps.

(*c.*) The Shinshinngoyuwa, whose villages lie south of the Siyins, on the east bank of the Manipur River.

(*d.*) The Mobingyis, who are apparently half Siyins half Kanhows, and who at some time or other broke away from the main

branches. Their villages lie to the south-west and west of the Siyin territory.

(*e.*) The Ngunngals, who live across the Manipur River (spelt in the newspapers Nwengals).

(*f.*) The Ngwité and Zaté, who occupy the hills north of the Kanhows, and, I believe have villages almost up to the Manipur valley.

(*g.*) The Haitsi-Lópa, who live on the eastern slopes of the Létha Range, bordering the Kubo valley.

For a list of the tribes under the control of the Political Officer at Haka I would refer the reader to Lieut. Macnabb's very interesting report on that district.*

Climate.—The climate of the Chin Hills is generally considered to be most unhealthy, and undoubtedly our troops suffered frightfully from fever of a very severe type, and from dysentery, at Fort White and other places; but at the same time it is a well-known fact that some of the posts were in very fairly healthy situations. It is difficult to assign a reason for the unhealthiness of places like old Fort White, and medical men have failed to discover the cause. Men who have suffered severely from fever in India either did not get it at all, or had it slightly; while some who had never had a day's fever in their lives, even when living in well-known feverish places in India and elsewhere, went down before the Chin Hill malaria, and had to be invalided. The generality of officers and men suffered very severely. The hot weather may be said to commence about the middle or end of April; but the heat is by no means excessive, and one does not require punkahs. At about the end of June the rains set in heavily, but I am unable to give the average rainfall. The rainy season is the most unhealthy time of the year in the Northern Chin Hills, and it continues till the beginning of September, when the weather becomes finer and more sunny, though heavy mists roll up in the morning from Burma. By the middle or end of October the cold weather may be said to commence. In the cold weather one gets frosty nights; but rain falls about Christmas-time, and also in the end of February or beginning of March. The two coldest months of the year are January and February. I have never seen snow fall in the Chin Hills, but good hard frosts are frequent.

Reasons for our Occupation of the Chin Hills.—The Chin tribes have undoubtedly only themselves to thank for our invasion of their country. They forced themselves prominently and unpleasantly upon our notice after the conquest of Upper Burma. But at the same time the existence of these tribes had long been known to the Government of India principally in connection with the feuds of the Kanhow Chins with the

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* Printed and published by the Superintendent of Government Printing, Rangoon, Burma. Price Rs.1. 8*a.* 0*p.*

Lushais and Manipuris. A most interesting account of these will be found in Sir A. Mackenzie's book, 'Tribes on the North-East Frontier,' in which, if I remember right, the Kanhows are referred to under their proper Chin name, Sókté or Sóktaté, the name "Kanhow" being given them by the Burmans. After our subjugation and occupation of Upper Burma the Chins began to be a thorn in our side, just as they had been to King Thibaw and his predecessors. Thibaw had tried sending an army to invade their country; but it was ignominiously defeated, and the troops retired after doing more harm than good to the prestige of the Burmese army. The Chins told me that they had heard rumours of our fighting in Upper Burma, but they imagined our troops were no better than King Thibaw's, and so, bursting from their hills in sudden and unexpected raids, they pillaged the Burman villages in our newly-acquired territory, slew all who resisted them, carried off into slavery all whom they succeeded in capturing, and murdered such of their prisoners as could not keep pace with them in their rapid retreat to their mountain fastnesses.

Or perhaps an old Chin chief died, and as Chin custom requires human heads for the adornment of a chief's grave, a head-hunting party would visit our territory for the express purpose of taking our subjects' heads. I have asked both Chins and their Burmese slaves how a raid is conducted, and they describe the mode of procedure as follows. I must first explain that every Burman village which is situated in the valleys lying at the foot of the Chin Hills is surrounded by a very strong double stockade, which bristles with formidable *chevaux-de-frise* of sharpened bamboos, so stoutly fixed and interwoven into the stockade, that were a village pluckily held by the inhabitants, no number of Chins could possibly succeed in forcing an entrance. Thus, an attack by day has no chance of success. The Chins, therefore, have to depend on friends and informers, who let them know when the village night-watchers will be likely to fail in their duty; or these same friends and informers will contrive to admit the enemy. In either case, just before dawn as a rule, the Chins, yelling and firing off their guns, rush the village, slaying those who resist, with their spears, swords, &c., while the panic-stricken villagers bolt in every direction into the jungle. The Chins do not burn down the village as a rule, because they say that in that case the villagers would go elsewhere, and it would be as foolish in their eyes to burn a village as it would be in ours if we first shot over a covert and then destroyed it, and compelled the remaining birds to go elsewhere. But a general pillage takes place, and everything of value is carried off, together with as many captives as they can secure. The Chins, however, do not stop in the village any longer than they can possibly help, but hurry back to their hills with their captives and booty. To retard pursuit and drive off their pursuers, should there be any, they have previously carefully erected stockades in places where the pursuers

would be completely at their mercy. If the marauders expect to be pursued, they leave some of their party to man one or two of these stockades, to take which requires a mountain battery gun, or, at any rate, well-disciplined and fearless troops.

A purely head-hunting party pursues somewhat different tactics. The Chins know well what forest paths in the terai are most frequented by Burmans travelling from one village to another. A head-hunting party will therefore select some one or other of these paths, and then lie in ambush in the early morning close to the side of the road (by close, I mean literally a yard or two from the footpath, the denseness of the jungle allowing them to do this). Then, when a party of hapless Burmans reaches the spot, the Chins fire into them with fatal effect at this exceedingly close range, and so secure some heads. A Chin is not particular as to whether the heads are those of men, women, or children; in fact, I have been told that he will even rip open the corpse of a murdered woman and cut off the head of her unborn babe, and count it as a trophy. Sometimes, again, when villagers' fields are surrounded by dense jungles, a party of Chins will attack the unfortunate unarmed peasants who are tilling the fields, and carry off their heads. I have often asked the Chins why they raid the Burmans, and they answered that, to begin with, they require slaves, for no Chin will work as the servant of another Chin, except in certain cases; another reason they gave is, that the Burmans raid the Chins, and that tit-for-tat is fair-play. Now, I know that there are Chin captives amongst the Burmans, but I find it difficult to believe that a Burman raid into the Chin Hills was a common occurrence, or even that such a thing could have ever taken place; for while it is a comparatively easy matter for hill-men to raid villages in the plains, it is obviously a very different matter for plainsmen to venture into wild and difficult hills and raid the villages of hill-men. The latter, in his native hills, has the plainsman at a far greater disadvantage than the plainsman has him when he ventures into the plains. I am inclined to think, therefore, that the Chins wilfully exaggerate when they say the Burmans used to raid them, and that the few Chin slaves which are held by the Burmans in captivity were never taken in what a Chin would consider a legitimate raid; they were probably captured whilst visiting friends in a Burman village. However, I am open to correction. The Chins further forced themselves into our notice by harbouring dacoit leaders whom we were using our best endeavours to catch—men whose existence at large implied fresh and serious outbreaks of rebellion. When Government found that the peace of certain of our newly-acquired districts was being rudely disturbed by the hill tribes, negotiations were opened up with them in the hopes that we and they might come to some satisfactory understanding. It soon became apparent that nothing but a punitive expedition would suffice to keep these wild tribes in check.

Punitive Expeditions.—For the last four cold seasons our troops have been operating in the Chin Hills. The first expedition was sent in the winter of 1888–89, under General Faunce. The force started from Kalemyo, and advancing towards the Létha Range, met with determined resistance the whole way. As our force advanced we constructed stockaded posts at convenient spots, in which small garrisons were left to guard our rear, furnish escorts for convoys, &c. These posts were known by their numbers, such as No. 2, No. 4, &c. A good road, at a fairly easy gradient, was also made as time went on, and has since been greatly improved. It would take up too much space to give any detailed account of the campaign; suffice it to say, we lost many men, chiefly through the unhealthiness of the primeval forests through which the troops worked; and though we drove back the tribesmen as we advanced, still they showed subsequently, by their undiminished misdemeanours, and by the incessant harassing of our posts and convoys, that they had not the slightest intention of giving in without further chastisement. Our troops, however, did very excellent work, as anyone will acknowledge who has ever attempted to force his way through a wholly unknown country, and operate in wild rugged hills where no supplies whatever are obtainable, and resisted, as we were, by hardy hill-men, who fought us pluckily every step of the way, and knew how to turn to the best account every coign of advantage offered by dense jungle or precipitous hill-side. General Faunce's force pushed down the western slopes of the Létha range, destroyed many villages, built Fort White, and penetrated, by means of small columns, as far as the principal Kanhow village of Tiddim. The Chins could not at all understand who the white men were who thus invaded their hills. For some time they set us down as spirits of some sort; and I remember that some of them came to General Symons, when he was operating at Haka, in 1890, and begged him, as we were all spirits, not to plague them with diseases. Some of them also told me that they thought we were children of the sun. They did not at all realise, either, that the troops were going to stay in the hills, and they consoled themselves by saying, "The troops will stay as long as their rice supply holds out, and then they will have to go back to Burma." I never could make the Chins understand where England is. They had no idea of there being any other country but Burma, and they dreaded being sent there as prisoners. Once when I caught two incorrigible telegraph-wire cutters, and sent them to Myingyan for a sight of the world outside the Chin Hills, their friends came to me in great grief, saying they knew they would never see the prisoners again. On my inquiring why they said this, they replied, "The Queen of England will see them, and as she has never before seen Chins, she will be so taken with them that she will keep them."

During 1889, Government decided to send a further expedition into the hills, and endeavour to make a road right through them from

Chittagong to Burma. General Symons was entrusted with the supreme command of this force, which worked in three columns. One, under General Symons, marched from Pakoko, on the Irrawaddy, up the Yaw Valley to Kán, a village on the Myittha, and struck into the unknown mass of hills west of that place. This column worked its way to Haka, which had been selected as the objective also of a second column operating from the Chittagong side, through the Lushai hills, under General Tregear. The third column, under the late Colonel Skene (murdered afterwards at Manipur), operated southwards from Fort White, and effected a junction at Tashon Ywama with General Symons' column. The work done by these three columns was very great; but so untamable and wild are the tribes that, at the close of the operations in May, 1890, directly the main bulk of the troops was withdrawn, the Chins commenced giving trouble again. The Lushais rose and attacked the posts of Changsil and Aijal, while their brethren south of these places were becoming troublesome. The Chins in the Haka district were defying us, ambuscading convoys, and doing everything they could to annoy us; in the Northern Chin Hills, the Kanhows refused to deliver up their Burman slaves or come to terms with us, and committed several serious raids on Burman villages, and laughed at the idea that we could ever succeed in penetrating their country and punishing them. Accordingly, in the cold season of 1890–91 fresh troops were moved up, and small punitive expeditions again operated through the Chin-Lushai hills.

I had been entrusted with the political work of the Northern Chin Hills, and had had the good fortune to succeed in getting in touch with the Siyins, the most warlike of all the tribes; but I knew that our friendly relations with this tribe were in their infancy, and an ill-advised speech, or anything which could be construed into a repulse at the hands of the Kanhows, would bring the Siyins about our ears again at once. The expedition against the Kanhows, which I had the honour of commanding, fortunately turned out a success, and they were taught a severe lesson, which had a favourable effect upon the tribes in the Northern Chin Hills. In the Haka district the various expeditions were in the main successful, and though operating columns have again been working through the Chin Hills this cold weather, they have met with no opposition to speak of, if one may judge from telegraphic reports in the newspapers. I believe there has been a slight disturbance in the Haka district lately; but we cannot expect wild tribesmen, who have never known either law or order, to turn all at once into a peaceable and law-abiding people. There must be some lawless, restless spirits amongst them, just as there are still in our own civilised London.*

* The above was written and printed some months ago. Since then the Siyins and Nwengals rose and gave much trouble. It is more than two years since I left the

Dress and Appearance of the Siyin Chins.—Taken as a whole, the Siyins are a finer race of men than the Burmese, and have well-developed arms, chests, and legs, though their average height does not, I think, exceed that of the Burman race. Their features are different to those of the Burmese, and of a rather darker colour. The Siyins have often, too, some hair on their faces, though not much. Some of the men have fairly good-looking countenances, but as they advance in life their faces show the marks of intemperance. The women for the most part are very ugly, with fat, flattish faces, but their limbs are sturdily built. The men gather their long hair into a knot behind their heads, and they have a small plait of hair on each side. For a head-covering the Siyin wears a dirty white flat turban. In the rains he uses a broad-brimmed hat, made of plantain leaves inclosed in a latticed framework of thinly-sliced bamboo, slightly tapering to a small cone at the top. For clothes, the men wear but one garment, usually a coarse dirty white or coloured cotton sheet, which they throw carelessly and loosely round them, and which they discard altogether sometimes without the slightest shame. The women wear no head-covering, but arrange their hair in great stiff curls on either side of their faces, with the remainder lumped together in a knot behind, the whole being saturated with pig's lard, the smell from which is most offensive. Girls and boys in early childhood run about naked generally, but little girls of seven or eight years of age usually wear a small strip of cloth round the loins. As they grow older they increase the size of this, or else wear a sort of short petticoat made of hundreds of strings, each of which hangs loosely and separate from the others from a narrow band round the waist. One would imagine that a garment of loose strings could not possibly be decent; but it is so, though the strings do not reach to the knee. At about the age of fifteen or sixteen the women wear a coloured cotton cloth woven by themselves. This is wrapped once round the hips, and barely reaches to a foot above the knee. Some women wear a cloth round their breasts also. Nearly every man wears a necklace of some sort; carnelian beads, both large and small, are much prized, and coloured beads from Burma are also largely used. The women wear quantities of necklaces, and prize greatly a large spiral shell which, they say, is obtained from tribes living near the sea.

Disposition and Nature.—The Siyins are undoubtedly a brave and

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Chin hills, and I do not at all know what caused the rising. Just as the Afghan tribes on the North West Frontier of India (notably those in the vicinity of the Black Mountain) are continually giving trouble, so, I suppose, will the tribes on our frontiers in Burma fret and chafe at the power which has been the first to hold their untamed spirits in check. Undoubtedly the only way to deal successfully with such tribes is to hit promptly, and to hit hard; it saves them and us future bloodshed, and untold expense; and a stitch in time, if it is a good one, will probably save more than nine.

hardy race. It is their boast that one Siyin is worth five of any other men; and the other tribes, generally speaking, acknowledge their superior pluck. I was told that long ago the Kanhows, Tashons, and Burmans banded together to exterminate the Siyins, and succeeded in surrounding their head village; but the Siyins made a desperate and sudden sally, and boldly rushed their enemies, who incontinently fled. The Siyins are very independent, and the free and easy way in which they put their hands on your shoulder and stroke you is apt to be resented by new-comers, who do not understand that this is not meant for impertinence, but friendship. Their chiefs do not possess much authority over them, chiefly, I think, because they are usually more drunk than sober. The women are by no means bashful, and though they are more or less in subjection to their husbands, they are not as a rule badly treated by the men. It is true they do most of the drudgery and agricultural work; but the men help them a good deal, though they consider that a man's proper work in life is to drink, hunt, and raid, and get slaves to help his wife. The Siyins are doubtless cruel, but I do not think they are nearly so cruel as the Burmese, and they are easily moved to mirth, and readily understand and appreciate a joke. They are by no means dull of apprehension, and I should put them down as a quick-witted, intelligent race, who would readily take to education.

Siyin Villages.—The villages are always built on the hill-sides where either natural springs exist, or where water can be brought from above by means of wooden troughs. These are made of hollowed-out saplings, and are about six inches in diameter, and by means of them water is often brought from some spring a mile away from the village. Villages are of various sizes, but I do not think the largest Siyin village contains much more than two hundred houses. They are very fairly clean, as pigs are kept not only for food but also as scavengers. Every house is built on ground which has been terraced, and is on piles three or more feet from the ground. In front of each house of any size there is a wooden platform, where the owner sits and basks in the sun, and receives his friends. Wooden steps lead up to this platform from the ground, and at the further end of it is the house, which is constructed of planks and beams, with a well-thatched roof. There is one door, but windows are scarce; consequently every house is dark. The larger houses contain two or more rooms, and the smoke from the fireplace, having no other outlet, wanders about, and escapes partly through the door and partly through chinks and crannies, and blackens the inside of the house. The chiefs' houses are larger than those of the others, and are sometimes over a hundred feet long; they usually have a large private enclosure fenced with a stockade of pine-logs ten feet high. A chief's house has also a finer platform outside it than the others. Every house stands apart, with plenty of space between it and the neighbouring ones. Underneath the houses the pigs and fowls live, and

other live stock, and all refuse is thrown down to them through a hole in the floor. The Siyins, like all other Chins, adorn the outside walls of their houses, just where the door is, with trophies of the chase. I have seen hundreds of skulls of all manner of animals, including those of tigers, bears, and panthers. Villages are rarely stockaded all round. Stockades are usually met with wherever the village is most easily approached. The jungle is allowed to grow around a village so as to afford the Chins good cover both for ambuscading and attacking an enemy, or for making good his escape from one. The stockades are generally very difficult to attack, being purposely built in spots very disadvantageous to an attacking party; and to take a Chin village which means to offer an obstinate resistance is a task which requires less skill than pluck—pluck of the best quality that can be got. Volleys fired out of an unexpected stockade, or out of thick jungle at a distance of a few feet, where you cannot even see your enemy, try the pluck of men and officers considerably; and as the Chin almost invariably fires low, the wounds received are usually fatal ones in the stomach. The ground is also sometimes "pangied"—that is, thickly studded with bamboo spikes, which are difficult to see, and which inflict severe wounds in the leg, and are a formidable obstacle to pass. A Siyin village is a picturesque sight when the apple, apricot, or other trees in it are in full blossom.

Household Utensils.—These are extremely few in number, and are very primitive. A few earthenware pots and gourds, a spinning-wheel of sorts, and liquor-pots and gourd-spoons are about all they have, unless one includes empty jam tins picked off the rubbish heaps at our various camping-grounds. There are no tables, chairs, or beds, and the men and women of course eat with their fingers. They have, however, shelves in their houses. For pounding millet or rice the Siyin cuts a block of about thirty inches or less off the solid trunk of a tree. This he excavates conically for about sixteen inches, and to lighten it he chips away at the outside till it assumes the appearance of two cones with the apex of each meeting in the centre of the block of wood. While chipping he leaves two or three handles to enable him to carry this heavy mortar. As we were hard up for chairs we used these rice mortars as stools, inverting them so that the hollow part rested on the ground. To husk rice in these primitive mortars the Siyin pours a handful or two of the grain into the hollow end and pounds it with a long heavy pole.

Hospitality and Drunkenness.—The Siyins, like other aboriginal tribes I have met, are much addicted to drunkenness, a propensity which is inherent in their nature. This is not a vice acquired from civilised nations, for they had had no dealings with the civilised world till they came into contact with us a short while ago. The Chin liquor is made chiefly from millet, and in taste is not unlike cider. I do not think they keep the actual liquor itself for long, but the dry ingredients from

which it is made are improved, so they think, with age. When liquor is required a large narrow-necked earthenware vessel about two feet six inches high is partially filled with the dry ingredients; a long hollow reed is then thrust into it and cold water is poured into the vessel till it is full. The liquor thus formed is then either drawn off by a syphon into a gourd, if required for refreshment on a journey, or is sucked up through the reed. It is rather heady if the ingredients are old, or mixed with a small quantity only of water, and men and women get very drunk off it, though they say it produces no nausea or headache in the morning. Drunkenness is no vice in their eyes, and the man who can carry more liquor than his fellows is rather looked up to than otherwise. I believe there are two kinds of Chin liquor, but none is imported. Crimes committed when a man is drunk are not punished. The Siyin, like all other Chins, is extremely hospitable, and it is thought an insult to go to a Chin village and not partake of the hospitality offered. To get drunk is considered a delicate appreciation of their hospitality.

Smoking.—The Siyins grow inferior tobacco, and the men rarely smoke. The women smoke for them, and collect the tobacco juice in the bowls of their pipes, which are made large for the purpose. When the bowl has received a good supply of tobacco juice it is mixed with water or saliva, and then put into a little gourd flask for the use of the men, who sip it. This custom, I believe, obtains amongst the Akas in Assam also. The horrible concoction is not swallowed, but is held in the mouth behind the lower front teeth, and no council or palaver of any sort is held without the nicotine flask, or *tui bu úm* as it is called, being passed round; and when one Chin meets another, instead of offering a snuff-box or a cigar, he will offer his *tui bu úm.* The women and little girls smoke from morning till night, and what with the reek of the tobacco juice, and the horrible odour of the pig's lard in their hair, and the general filthiness of their bodies, it is hardly to be wondered at that whenever duty compelled me to hold a conversation with a woman I always carefully noted the direction of the wind; and I have been guilty, on more than one occasion, of the rudeness of contriving that the lady should stand forty yards from me during our conversation.

Caste, Religion, and Morals.—The Siyins, like other Chins, have absolutely no caste whatever, and will partake of food cooked and offered by anyone. They will eat pigs, fowls, goats, oxen, dogs, cats, rats, and snakes—in fact, anything; and an armadillo is considered a great delicacy. But they do not understand the milking of cows, and so do not use either milk or butter.

[As regards religion, I cannot say I discovered anything worthy the name of a religion amongst them. I believe, but am not sure, that some of these hill tribes acknowledge one Supreme Being, but I could not find that the Siyins believe in anything but spirits of the wood, water, trees,

and house. Of course they are believers in ghosts and witchcraft, but I failed to discover any one chief spirit; and their religion, if it be called so, does not teach them that any particular act is a sin; it has no moral influence over them. I believe the only sin is detection as the author of an injury to a fellow man or woman. Curiously enough, the word *shiam*, which means *to work*, also signifies *to pray*, and this of course recalls to one's mind the old motto, *Laborare est orare*. There are individuals amongst them for whom I can find no better name than *medicine men*. Not that they deal in any medicine except charms. The Siyin uses no medicine except what we have lately dispensed to them, and thinks that every hurt or sickness can be cured by an offering to the *dwaité*, or spirits. The medicine-men profess to be able to tell them what spirit has afflicted them, and directs what conciliatory offerings are to be made. Sometimes these take the form of merely little clay balls threaded on a string, and fastened on the tree where the spirit dwells; but more often the medicine man will order a goat, dog, pig, or fowl to be killed, according to the means of his patient, and he himself comes to help eat the viands thus provided. He also officiates when treaties are made, and mutters charms over the head of the beast which is to be slaughtered. The Siyins have various methods of determining whether a venture will be successful or not. One is, I think, worthy of being mentioned. A small piece of ground, say two feet in diameter, is marked off with a stick into three or more divisions. In the centre a small tripod a few inches high is erected, and an egg with the top cut off is balanced on this; fire is placed under the egg, and if the white bubbles up and falls over on an unlucky side the venture will not be undertaken. All Siyins are more or less dirty in body, and in mind too. To wash the body is considered a sign of faulty intellect, and a habit out of which a man should be chaffed. I have said a Chin loves a joke, but he would think it a serious joke if you playfully spread a report about that he was in the habit of washing, for he would be laughed at more than he cared to be. The morals of the Siyins are decidedly loose, though adultery is occasionally punished either by heavy fine or death. Before marriage a man may have intercourse with an unmarried girl so long as she consents; if she is forced against her will it is considered a crime. Should a child be born before marriage it is destroyed. Murder and theft are punished by death or fine if the murderer is not too influential to be meddled with.

Marriage and Divorce.—Beyond offerings to the spirits the Siyin does not make his marriages a religious ceremony. When he wishes to marry he employs a friend to go to the girl's parents, and settle what price he is to pay for his bride. This of course is paid in kind—either grain, mythun, or goats, &c. Should the price be too heavy for the wooer's means, he either gives up the idea of marrying the girl, or, if he marries her, he works off his debt as a bondsman to his father-in-law. Sometimes marriage debts are not paid off for years. There is of course

a marriage feast, and the bride receives presents from her friends, and a pig or mythun is killed, according to the means of the family. I never saw a Siyin marriage, and do not know exactly what ceremonies are gone through. A Siyin may marry as many wives as he can afford to keep, but only the most wealthy amongst them have more than one wife. It is not easy to say what are considered sufficiently good causes for a man to divorce his wife; for the Siyins have such lax ideas of female purity that adultery is only a crime if the woman can prove she was forced against her will; and again, if she can satisfy her husband that though she sinned willingly she was drunk at the time, then the adultery is not considered a crime. A Siyin would probably divorce his wife if she committed the offence very often. Again, if a girl finds she cannot get on with her husband, she can run away back to her father's house. If a man divorces his wife he can demand back the price he paid for her; but whether he gets it or not is another matter, and depends a good deal on whether he has more influence and position in the tribe than his father-in-law. The Siyins are very fond of their children, and treat them kindly.

Funeral Obsequies.—The Siyins bury their dead, but not immediately after death. The body is kept in the house for sometimes a year or more, being dried and cured by smoke and by the sun. They do not use any method of embalming, and do not even remove the intestines, and why the bodies of the dead do not become offensive I do not know. I remember once going into the hut of a miserable old man who was paralysed from his waist downwards. He had only one child, a little girl of nine, to look after him. It was a bitterly cold evening, and I found him sitting stark naked by a wretched smoky fire in a hut the walls of which let in the cold wind everywhere. I asked him where his cloth was, and he pointed to a shelf. I lifted the cloth up, and found, to my surprise, the corpse of his wife, destitute of all clothing. The old paralytic had given up his only garment to cover his dead wife, who, I learnt on inquiry, had been dead four months. I doubt if many men could have left that hut untouched by the sight. In spite of the woman having been dead so long there was no smell whatever, and the body seemed shrivelling up into parchment. There are various funeral ceremonies, such as lying in state, or taking the body outside the house for the general public to come and view it, and offer food to the corpse; this is called *thí mai*. Then there is the *thí phe'*, which is keeping the body in the house, when only relations are admitted, and they offer it food. Placing the body in a coffin and removing it to its final resting-place in a cemetery is termed *thí wí*. The Siyins hold regular wakes for their dead. I attended one such gathering when three bodies were waked. Numbers of guests had been invited, and on a raised platform outside a hut I found a large number of men and women dancing round the corpses. The three bodies were swathed from head to foot in cloths of

various colours, so that not even their features were visible. They were decked out with all sorts of ornaments, and peacocks' feathers nodded on their heads. All three were secured in an upright position in a stout bamboo framework which was carried by some men, while the female relations of the deceased stood by the bier weeping and shrieking. One of the bodies was that of a young man, and, consequently, a bamboo, representing a gun, was fastened over one of his shoulders, while a powder-horn was slung over the other. The bearers and weeping women formed the centre of a circle of men, who danced round them. Each man had one arm round the neck of the man in front of him, and the other arm round the waist of the man behind him, and they danced a slow measured step, singing the following words:—

Háng suon pó! Háng liou liou!
Tong suon pó! Tong liou liou!
Tong hí suoné,
Háng suoné,
Khutáng shié báng,
Pial moé.

This being fairly literally translated, runs:—

Brave relations, all! brave, again and again!
Feast relations, all! feast, again and again!
Our relations (*i.e.* the corpses) have had their feast;
Our brave relations are caught (by death) as in a trap,
They cannot get free.

Each time the song or chant ended the men would stamp loudly with their feet, and laugh merrily if anyone stamped out of time. Outside the ring of dancing men women perambulated, who sang and wailed by turns. In the hut and its verandah crowds of men and women were seated round a dozen large liquor-pots, sucking up the liquor through reeds, and getting drunk rapidly. I did not notice any signs of quarrelsomeness as they grew intoxicated; all seemed to be in a good humour, and simply bent on getting as drunk as they could. The only musical instruments were a gong and a small drum. Towards evening guns were loaded with blank ammunition and fired into the air. Many of the men brought their guns to me and requested me to help on the wake by firing them.

Diseases.—The Siyins suffer from fever, dysentery, and eye diseases. They are also occasionally visited by cholera and small-pox. They do not, as far as I could make out, suffer from contagious diseases, and I never came across a case of syphilis or leprosy, though I believe the latter disease is not unknown amongst the other tribes. They know absolutely nothing of the healing art, and have no medicines, and do not understand the healing properties of any herbs.

Agriculture.—The Siyins have no fertile valleys with level patches of ground, as their hills run down precipitously to rocky watercourses.

They are, therefore, compelled to make clearings on the steep hill-sides by cutting down trees and burning the jungle. When a clearing is made they do not terrace the hill-side, but merely dig it up rudely with a mattock (they have no ploughs), and, when necessary, irrigate the crop by little troughs made of hollow trees, which conduct water from the nearest spring. The crops sown are cotton, Indian corn, millet, the aunglak bean, a little rice, yams, sweet potatoes, and a few other vegetables, such as pumpkins, a kind of cucumber, and a sort of elongated French bean. Sowing is usually commenced in March, and the reaping of various crops begins about August, and goes on for some time, according as each crop ripens. The fruit-trees commonly found are plantains, oranges, limes, a poor kind of mango, and indifferent apricots. The wild medlar, cherry and apple also grow in the jungle.

Minerals.—The hills do not seem to afford much mineral wealth. I have come across traces of iron, and have seen quartz. The Siyins themselves do not seem to know what gold, silver, and copper are, though they have names for them. They have no ornaments made of these metals, and they do not appear to be able to extract iron from the soil, but get it from Burma. The telegraph-wire was a great boon to them, and they annoyed us excessively by perpetually cutting it, and carrying off several miles' length of it at a time. I found that out of it they manufactured knives and agricultural implements, and also bullets. Salt is found sparingly in the hills, and is greatly valued, being procured by the process of evaporation from the soil. The Siyins had no money or tokens until we settled amongst them. They refused our money at first, and would only take brass buttons and empty tobacco-tins, &c., in exchange for fowls, eggs, or anything else which they brought for sale. Now, however, they have begun to learn the value of money.

Handicrafts.—The Siyin women manufacture, with rude looms, a coarse cotton cloth, the threads of which are sometimes white, sometimes yarn-dyed with some vegetable dye they procure. They also get dyed yarn from Burma. I noticed that the patterns differed with different tribes in the Chin Hills, so that one might almost classify them as clan tartans; for though members of the same tribe did not exactly tie themselves down to one pattern, yet one would find that some particular pattern predominated in each tribe.

Amongst the men some follow the trade of blacksmiths, mending guns, and making spears, knives, and agricultural implements. Their bellows are very ingenious, and consist of two large hollow bamboos, about six inches in diameter and three feet high, placed vertically in the ground about eighteen inches apart. From the bottom of each of these hollow uprights run, horizontally, two small iron tubes, which converge till they almost touch each other, at a distance of about three feet from the uprights. To drive a current of air through these

iron tubes, and blow up the fire placed over their extremities, two pistons are worked in the uprights by an assistant; these pistons are circular pieces of wood, with bamboo piston rods, and each circular piece is made to fit the cylinders tightly by quantities of feathers securely fastened round them. I possess one or two small swords and knives made by Siyin blacksmiths, and very neatly made they are too, and well sharpened.

Carpentering is an enormous labour to the Siyin, for his tools are so few, and so inferior. He has no saw, file, or plane, and his axe is a very indifferent one. To obtain a plank he chips away at a tree which has either fallen of its own accord, or which he has felled partly by chipping, partly by burning it through at the base. Out of one tree he at last chips away one plank, and it is wonderful how, with no other implement than an indifferent adze and a knife, he will smooth the surface of his plank. The labour of cutting planks is so great that it will be readily understood how greatly planks are prized by the Siyins.

Domestic Cattle.—Beyond a few goats and some mythun, the Siyin has no domestic cattle. Occasionally he succeeds in raiding oxen and buffaloes from Burma. The mythun, known amongst the Siyins as *shiel*, are a kind of wild cattle, I believe, but they are very harmless and docile. In colour they are generally black, with white legs. They have thick, short, curved horns, and powerfully-built legs. The village mythun are allowed to graze over the hill-sides, and are not herded at night, being prevented from roaming too far by means of fences. They are only kept for slaughter on big occasions, such as weddings in well-to-do families, treaty-making, &c. They are never used for agricultural purposes or as beasts of burden, nor are the cow mythun ever milked.

Weapons.—Besides flint-lock muskets, the Siyins still use occasionally bows and arrows, and spears. They also possess swords, or dahs, some of which they make themselves, while others are bought, or stolen from the Burmans in raids. They are said to manufacture their own gunpowder, and I believe the aunglak bean enters largely into its composition; but I never saw any gunpowder being made, and they can get it, or could get it a short time ago, from the Burmans. They have a coarse-grain powder for the actual charge, and a finer grain for the priming. The coarse-grain powder is carried in a handsome powder-horn made of the horn of the mythun, the wild ox, or the bison, and it is more or less ornamented with lacquer, which is also used in the ornamentation of their guns. This lacquer is the gum of some tree, and is red, but to obtain black lacquer the Siyins mix powdered charcoal with it. The fine-grain powder for priming is kept in a small horn about the size of a she-goat's horn. These powder-horns are carried by a strap passing over the shoulder, and are prettily ornamented with cowries and beads. The Siyin's bullets are usually made of hammered iron. He values his gun more than anything else

he possesses, and takes great care of it, keeping it clean and bright on the outside, though the inside is usually very dirty. I asked the Siyins where they got their guns from, as they all bear our Tower mark. They said they bought some, and took others from the Burmans in raids.

Fortifications.—The Siyins, and indeed all Chins, are very clever in the construction of defences such as stockades and stone walls, and they invariably select the strongest and best positions for them. Sometimes a ditch is dug across a narrow neck between two knolls, where an enemy is obliged, by the nature of the ground, to pass. The ditch is covered with bullet-proof logs, and you come upon it suddenly, and are only aware of its existence when a volley greets you, fired apparently out of the ground. The ditch will have two exits, one at either end, to enable the defenders to escape if necessary down the steep hill-side; and it is always made where the hill-side is covered with dense jungle, and so steep that an enemy would find it difficult to work along it. Stockades and walls are also constructed in positions which are extremely difficult to turn, and where an attacking enemy are brought suddenly under a close and heavy fire. Stockades are generally constructed of stout pine logs some ten feet high, roughly loopholed, and with occasionally a second row of logs placed behind the interstices of the front row. Sometimes they are constructed of open-work bamboos, with thick bristling *chevaux-de-frise* of sharply-pointed bamboos firmly interwoven with the uprights and cross-pieces. Such a stockade is extremely difficult to take. It requires great care and time to cut it down, owing to the huge *chevaux-de-frise* extending from top to bottom, the spikes of which, pointing in every conceivable direction, give wounds which fester badly; and those who attempt to try and cut it down are exposed to a heavy fire from the defenders, who, lying down concealed in dense jungle a few feet in rear, fire with deadly effect through the open bamboo framework. Stone walls are constructed at a height of about four feet from the ground, and logs are placed on the top to give head-cover to the defenders. The jungle is also cut down for a little distance in front of stockades and walls, so as to bring an enemy well under fire, and deprive him of cover.

Treaty-Making.—Formerly, whenever a dweller in the plains wished to obtain exemption from being raided, he would, if he had the boldness to do it, visit and interview an influential chief by whom he feared he might be raided. If the interview were successful, the chief would give him a large carnelian bead, and as long as he had this bead in his possession he and his were supposed to be safe; but it was not an easy thing to get one of these beads. The ceremony, however, of treaty-making between the Siyins and the English is a different matter, and the ceremonial observed when any Chin tribe makes a treaty with the English is very much the same as that which obtains amongst the Siyins. Terms are explained and discussed for days, two of the principal

points being abstention from raiding British territory, and the delivering up of all Burman slaves. When a satisfactory understanding has been arrived at, and the small amount of tribute, and the fines for past misdeeds, have been paid up, the English representative and the Chin chiefs proceed to a convenient spot, where a mythun is tied to a stake firmly driven into the ground. The medicine man sprinkles water and Chin liquor over the animal, and mutters various charms. When he has finished his task, the head chief takes his gun and shoots the animal through the head, killing it instantly. The carotid artery is then cut and the blood is caught in a vessel, while the medicine man cuts off the mythun's tail, dips the end of it in the blood, and strikes every principal person with it, including the British representative. He then digs a hole in the ground, and pours some liquor and blood into it, and then sets up a stone firmly in the hole as a witness. The slaughtered mythun is cut up, and portions of it are given to the English officers as well as to the Chins, who carry away every bit they can get, including the entrails. The paper on which the terms of the treaty were written is after this burnt, and the ashes are placed in a cup, which is then filled with Chin liquor, and the chiefs, English political, and other officers, each drink some of this nauseous mixture. The ceremony is then completed, though I cannot say the treaty is always kept inviolate by the Chins.

Flora of the Siyin Hills.—I am, unfortunately, not a botanist, so I can only give a general description of the flora of the Siyin Hills. Endless varieties of orchids are found, and they blossom at different times of the year. A very large variety of white lily, with a delicious perfume, grows abundantly near old Fort White, at the end of the rains; also tiger lilies, lilies of the valley, oleanders, acacias, the common red rhododendron, daisies, primulas, purple cowslips, violets (white and purple), anemones, and hosts of other flowers. Amongst trees I may mention a species of ilex, the holly, teak (at low elevations), and a pine tree, very like the *Pinus longifolia*. In the primeval forests, trees, creepers, flowers, and ferns of various kinds abound.

Fauna. Hunting and Fishing.—The wild animals found in the Siyin Hills, and in the adjacent ranges and terai forests are the elephant, rhinoceros, tiger, panther, black bear, wild boar, gural, sarrao, sambhur, wild ox, bison, wild buffalo, four-horned deer, barking deer, hare, hoolak monkey, langoor, small brown monkey, fox, wild cat, and jackal. Amongst the birds there are, I think, three distinct kinds of pheasants, including the *Phasianus Horsfieldii*, about three kinds of partridges, two or three different kinds of quail, woodcock, snipe, the common wood-pigeon, the blue rock, the imperial, and the green pigeon, jungle fowl, larks, thrushes, blackbirds, crows, doves, and sparrows. Amongst birds of prey an occasional eagle will be seen; also vultures, kites, and hawks. The rivers are fairly well stocked with fish, amongst

which mahseer seem pretty plentiful. The Siyins catch the fish with nets, or else by poisoning the stream. They are great hunters, but how they manage to kill elephants and tigers with their wretched guns is a mystery to me.

Musical Instruments.—The only musical instruments I have ever seen or heard in the Siyin district are gongs, drums, and a little pipe made of a hollow bamboo, and capable of producing two or three dismal little notes. But near Tashon-ywama I was presented with a curious instrument. It was made of a small gourd, with eight small hollow bamboos, about eight inches long, fastened into the gourd with beeswax. Four of these pipes sloped at a slight angle outwards, and four of them sloped towards the performer. There were various holes bored in each pipe, and to produce a sound the thumb and fingers of each hand had to cover certain holes; you then blew into the neck of the gourd as hard as your lungs would allow, and one really harmonious but fleeting chord was produced. But the sound was only momentary, for the gourd and pipes let out the air instantaneously; and so great is the effort required to produce the sound, that after two or three prodigious blows the performer has to lie down and rest.

Language.—When I first went to the Chin Hills I found that no European was acquainted with any of the dialects spoken there, and it was rather up-hill work at first learning the Siyin dialect and reducing it to writing. As far as I know none of the tribes possess a written language, and I could only get at the Siyin dialect by means of an intelligent Burman who knew English very well indeed, and a Chin who knew Burmese very well. I claim no great merits for my 'Manual,' for I merely intend it as a stepping-stone for those who come after me, and whose duties lead them to the northern Chin Hills. The Siyin dialect is well understood in the northern Chin Hills, though its proper home is in the villages around Fort White. The dialects of the Kanhows, Nwengals, and other tribes in the northern Chin Hills, differ from that of the Siyins; but, as I say, they all understand Siyin sufficiently for most purposes. The dialects of Haka and Tashon, however, differ very widely from Siyin, as will be seen by comparing the following sentences taken from my book, and from Lieut. Macnabb's 'Manual' of the Haka dialect.

	SIYIN.	HAKA.
Which is your eldest son?	*Nangmá tapálienbil akwó yim?*	*Nă fa ă-u-pă-byik ă-ho-dā-shi?*
It is raining.	*Ngó yú hi.*	*Rwa-pi ă-shūr lyo.*
How far is Burma from here?	*Mísunpân Kaulpí akhólá yim?*	*Ma-hin Koi-kwa yă-yă-dā ăhlat?*

At the same time there is a connection between the two, inasmuch as many of the commoner words, such as father, woman, &c., are the same in both dialects. I believe the Siyin dialect would be properly classed

as a monosyllabic language, though one will find agglutinative particles in it. Words that I have spelt as one long word can, I believe, with a few exceptions, be split up into monosyllables, each having its own meaning. Thus, take the word for "eldest son." I have written this as one word, *tapálienbil*, because I think it is easier for a beginner who has to learn where the accent comes in pronouncing a compound word like this. But *tapálienbil* is composed of *tá*=child, *pá*=male, *lien*=big, and *bil*, the sign of the superlative, answering exactly to our *est* in *biggest*. Again, in *anhwinná*=a cooking-pot, the *ná* may be termed an agglutinative particle; *an* means *food*, *hwin* means *to cook*, and *na* is the sign of the agent, or instrument rather, in this case. I can hardly in this paper give a minute description of the language, but I will try and give, as shortly as I can, a brief summary of what will be found at length in my 'Manual.' There is no *r* in the Siyin language, and *f* is only used in one or two words. There is no article, properly so called. Where *a* in English can be translated as definitely meaning one, and one only, the Siyins would then express it by *khat*=one; *the* is expressed by *mishié*=this, or *miashié*=that, when necessary to be explicit.

There is no inflexion of substantives to express case, gender, or number. Masculines are expressed by the suffixes *pá* and *tal*, as *tapá*=a male child, *i.e.*, son, and *kieltal*=a he-goat; feminines by the suffixes *ná* and *pui*, as *tanú*=a female child, *i.e.* a daughter, and *kielpui*=a she-goat. The plural is often not expressed at all; when it is, the suffix *té* is added to the singular, as *khwó*=a village; *khwóté*=villages. Adjectives follow the substantives they qualify, and are not inflected, nor do they undergo any change or addition to express gender or number. Degrees of comparison are expressed by *sáng* . . . . *zau* for the comparative, and *bil* for the superlative degree; thus, *anai*=near, *sáng anai zau*=nearer; and *anaibil*=nearest. The pronouns are indeclinable, and the personal and possessive pronouns are the same. The infinitive is the only form of the verb; by using certain words in conjunction with it the tenses are formed. Infinitives end in no particular letter, nor are they of any particular form. The personal pronouns in a shortened form are generally added as pronominal affixes to the infinitive. The personal pronouns and their shortened forms are as follows:—

I=*kémá;* a shortened form used as pronominal prefix, *ka*.

Thou or you=*nómá* and *nangma;* a shortened form used as pronominal prefix, *na*.

He, she, it=*amá;* a shortened form used as pronominal prefix, *a*.

We=*kómá;* a shortened form used as pronominal prefix, *ka*.

They=*amáté;* a shortened form used as pronominal prefix, *a*.

The present tense is formed by adding *hi* or *hí* to the infinitive.

The past tense is formed by adding *yó hi* and *tá hi*.

The continuative past (by which I mean "used to") is formed by adding *té hi* to the infinitive.

To express an action completely finished, or, as the Madrassies would say, "done finish," the words *phayó hi* or *khoung* are added to the infinitive.

The future is expressed by adding *tú hi* or *tú wé* to the infinitive.

The conditional future is expressed by adding *yó tú hi* to the infinitive.

The imperative is expressed by adding *ó* for the singular, and *wó*, *téó*, or *téun* for the plural.

The following examples will show how the tenses are formed, and how the pronominal affixes are used.

I am throwing a stone=*Kémá suóng* (stone) *kasep hí* (*sep*=to throw).

Thou art throwing a stone=*Nangmá suóng nasep hí.*

He threw a stone=*Amá suóng asep yó hí.*

We used to throw stones=*Kómá suóngté kasep té hí.*

They will throw stones=*Amáté suóngté asep tú hí.*

Throw a stone=*Suóng nasepó.*

The verb *to be* is the word *óm.* If any of my readers are acquainted with Theosophy they will remember the stress Theosophists lay on the meaning of the Sanskrit word *om*, which also signifies *being*, *existence*, and is believed to have a deeply mystic signification.

In interrogative sentences the words or particles *yim*, *mó*, *ngé*, and *né* are placed at the end of the sentence to show that a question is asked.

The potential mood is expressed by the words *yó*, *zó*, or *thé*=can, or able, added to the infinitive form.

The agent is sometimes defined by the particles *ná* and *pá.*

The passive voice is expressed sometimes by the words *nga(t)*, *dó*, and *khám*, all of which mean to bear, suffer, or endure; they are added to the infinitive. But if possible the sentence is turned; thus, *He will be killed*, would generally be rendered by *Others will kill him*, or *So-and-so will kill him.* Again, *The man was killed by a tree falling on him*, would be expressed thus, *A tree having fallen on that man, he died.*

The idiomatic uses of tenses, verbs, auxiliary endings, &c., cannot of course be treated of in this paper, and really can only be learnt by a careful study of the numerous sentences I have given in the 'Manual.'

The present and past participles are formed thus:—*kap*=to cry; *kakap*=crying; *kapá*=having cried; *ling*=to shiver; *laling*=shivering: *lingá*=having shivered.

There are a large number of adverbs and prepositions.

The simple rules of syntax are:—

1. Adjectives follow the substantives they qualify.

2. There is no distinguishing sign of the possessive case; the object possessed follows the possessor.

3. The dative case is not usually expressed, though sometimes the words *hong* or *hom* are used. *To me* is always expressed by these words, but not so *to you*, *to him.*

4. The personal pronoun, or the subject of the verb, usually stands first in the sentence.

5. The verb and its auxiliary ending come last, unless the word *not* occurs in the sentence, when *bó* or *bong*=not, comes last. If there is a question asked, the interrogative particle comes last; and if both *not* and an interrogation occur in the sentence, the interrogative particle ends the sentence immediately after *bó* or *bong*=not.

6. Pronouns sometimes follow and sometimes precede the nouns they qualify.

7. Conditional sentences are distinguished by the word *lé*=if, occurring at the end of that portion of the sentence which expresses the condition.

Of course there are many idioms in the Siyin language, but nothing like what there are in Persian and Pashtú.

Being an unwritten language the Siyin vocabulary is not large. I succeeded in getting hold of about seventeen hundred words only, and I doubt much if that number can be largely added to.

Poetry.—The Siyins have many songs, both for grown-up people and for children; and they are great hands at making impromptu songs. In fact, at a wake, marriage, or any festival, the head man is expected to make impromptu verses in honour of the occasion, and the individual who makes the most of these couplets, distiches, &c., is considered the wit of the party. The night before I left the Chin Hills a feast and dance were held to bid me good-bye, and many songs were sung in praise of me; and though I was by no means sorry to be returning once more to civilisation, yet I felt that a bond of union had grown up betwixt these savages and myself which I was in a measure loth to sever. Those who take the interest in them that I could not help taking, will find that there is something in them to admire, and much, very much, to pity.

Major Rundall's Map.—This map is based on the Indian Transfrontier survey, with additions from route maps made during the recent military operations.

F. S. Weller, lith.

Scale 1:1,000,000
English Miles.

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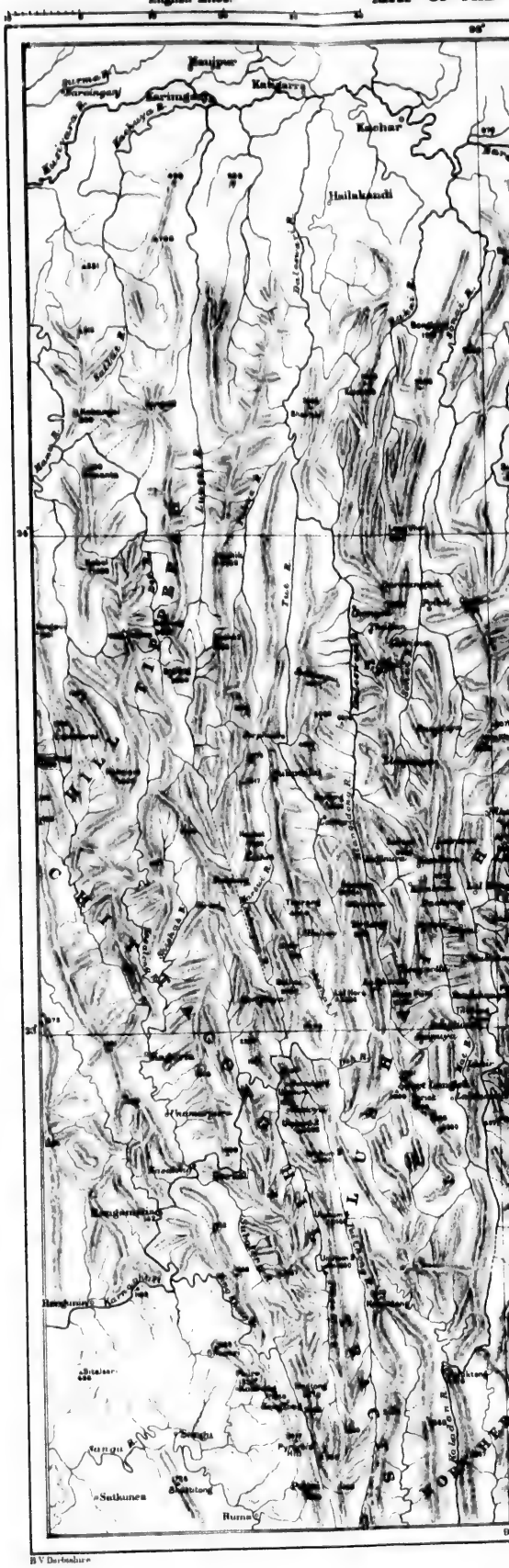

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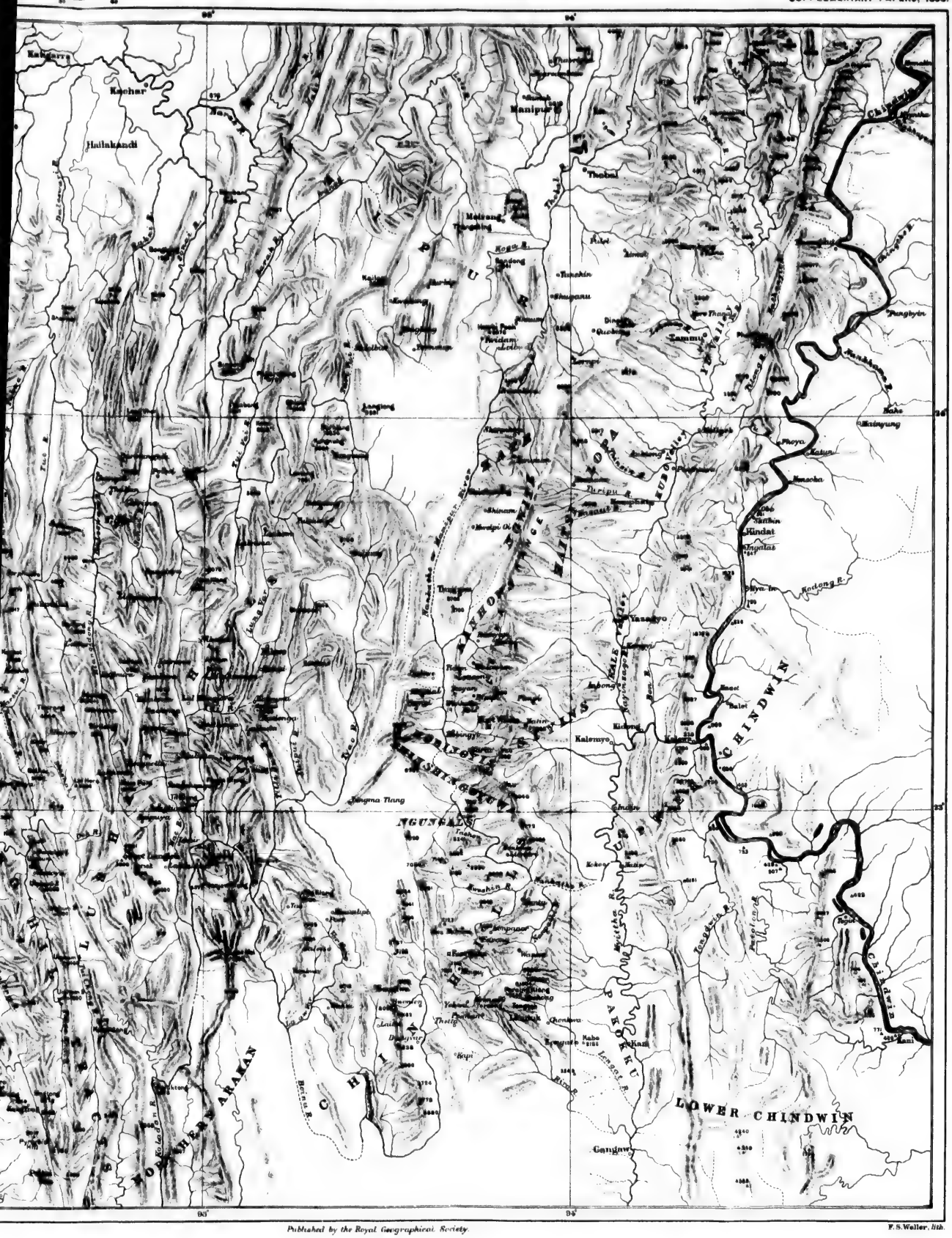
MAP OF THE CHIN AND LUSHAI HILLS WITH PART OF MANIPUR.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Kubo Valley
Kaleiyo R.
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Kapi
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Kaiyo Ridge
Kaiyo Range
Kaiyo Pass
Kaiyo Peak
Kaiyo River

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SURVEY JOURNEY IN SANTO DOMINGO, WEST INDIES.

BY

JAMES W. WELLS, M. INST. C.E.

WITH MAP.

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A SURVEY JOURNEY IN SANTO DOMINGO, WEST INDIES.

By James W. Wells, M. Inst. C.E.

Map, p. 604.

On April 6th, 1892, I landed at the city of Santo Domingo, in the island of that name in the West Indies. As the object of this paper is purely geographical, I cannot venture to touch upon the great historical events which have occurred here, "the cradle of the New World." Here we find the old tree which, tradition says, is the same mentioned in Columbus's diary, to which he secured his caravel on his first landing; the fine old picturesque citadel hoary with age; the yet massive but crumbling walls and roofless palace of Diogo Columbus; the old convent of San Francisco; the city walls, and many other relics of the departed grandeur of the past of Santo Domingo. All these features and also the scenes of its modern life are well described in Hazard's 'Santo Domingo.' That work was written in 1873, since which date considerable progress must have been made. Hazard refers to "the quay, entirely deserted of shipping," and says, "The general business of the city appears very limited indeed, and there are only one or two really large and extensive stores with general assortments of goods." This description is no longer applicable, for now there are numerous stores and new buildings, busy streets with tramways and cabs, and long lines of wooden quays or stages newly-erected or being erected, which are anything but "deserted of shipping."

At midnight, April 9th, in company with two companions and some half dozen strangers I embarked on board the *Joséfita*, a small coasting sloop bound for Barahona in the Bay of Neyba, a port about 100 miles to the west.

The hour of departure was late, it being necessary to await the coming of the land breeze which was, as usual, not very punctual in its arrival. The little sloop was crowded with cargo and passengers, and while we were seeking for some softer couch than the edge of a barrel, or the corner of a box on which to spread a rug for the night,

there occurred an incident which sufficiently indicated the state of tension in which the inhabitants live.

Late in the afternoon of the next day I landed on the shores of the Bay of Ocoa, and walked 3 miles inland to the ancient but small town of Azua. At least the site of the town is ancient, the first town having been built in 1504 by Diogo Columbus; but that and succeeding towns were destroyed by fire, battle, or earthquakes. Here is the entrance into the debatable land, extending to the frontiers of Haiti, once held by the unconquered Indian cacique Enriquillo, then raided by bands of French and Spanish maroon negroes, and finally by the armies of Haiti or by Santo Domingo revolutionists; this little-known region is what I was about to traverse.

The streets of Azua are wide and straight, but the majority of the houses are small frame houses covered with split palm staves, and thatched with palm leaves or roofed with sheets of zinc. Some few of the stores are large and well-provided with goods, and a considerable degree of quiet prosperity is distinctly perceptible. The surrounding country, at the time of my visit, was parched dry from the effects of an unusually long drought of fourteen months; not a blade of grass was visible, and barely a tree could show a leaf; strange indeed was the consequent wintry appearance of withered cacti, thorny mimosa, and bush in such a torrid heat as I experienced. But I found an exception to the prevailing scenes of desolation, for about two miles to the west is a region perpetually green with the most luxuriant vegetation—trees, grass, sugar-cane, and other agricultural produce growing in a most extraordinarily prolific manner. The soil, a white, marly loam, is identical with that about Azua, but no fertilising water is to be seen. The cause of this oasis is to be found in the fact that the land very gently rises in a steady slope to the hills and mountains beyond Azua, and further down the slope and near the River Houra there appear innumerable springs of water in the dryest season; whenever a well is made in this favoured region the water rises to near the surface of the soil. These facts seem to indicate a water-carrying sub-soil formation, which probably exists at a greater depth and below the reach of the roots of vegetation the higher the land rises, but approaches nearer the surface on the lower levels. It probably originates in the hilly country miles away.

The sugar-cane is so rich and luxuriant, and in such quantities, that there are not mills sufficient to crush it or local capital to purchase machinery. There is actually enough cane planted to annually yield twenty thousand bags of sugar of 300 lbs. each. Cattle are fed on the surplus canes, which can be bought for 6*s.* per ton. I brought away some samples nearly 4 inches in diameter; but unfortunately the boatmen ate them, as they not unnaturally observed on the reprimand I gave them, "Who would imagine anyone valuing the food of cattle."

After waiting at Azua two days whilst our packet-boat was unloading, we arrived at Barahona on the 13th. The coast passed on the way is high and rugged, rising from lofty perpendicular bluffs to much higher ground inland, grassy and thinly sprinkled with bush, affording a noble coast scenery somewhat similar to that of the coast of Cornwall.

The approach to Barahona is very pleasing. Considerable lofty hills surround the Bay of Neyba right and left of the mouths of the Rio Yacki, from whence, almost due west to Port-au-Prince, in Haiti, stretches a low valley, bordered on the north and south by lofty mountain ranges. This hollow it is practically the main purpose of this paper to describe, for it is a portion of the island little known to those who have written on Santo Domingo.

Barahona possesses a wonderful little natural harbour. On an otherwise open coast a coral reef extends about 2 miles from, and parallel with, the shore, forming a natural breakwater to a considerable inclosure, 12 to 30 feet in depth. Many submerged rocks in this natural harbour are a danger to vessels entering or going out; but as the channels between are clear and distinct, the port pilots can easily conduct a ship in or out of port, but a steam-tug would greatly minimise possible existing dangers to sailing vessels. There has not been any Admiralty survey of the southern coast of Santo Domingo.

Hills of considerable elevation, covered with woods, rise up to the rear of the little town, and form a very pleasing aspect from the sea. These elevations run almost due west to the opposite extremity of the island, in the Republic of Haiti, and in places rise to 5000 to 6000 feet above the level of the sea. From base to summit they are covered with forest, rich in mahogany, lignum-vitæ, fustic, lance-wood, satin-wood, and other valuable timber, the greater part of which cannot at present be felled and transported for want of roads; to devise a means of overcoming this difficulty was one of the objects of my mission. The exports of Barahona are almost exclusively timber, chiefly lignum-vitæ; but the trade has fallen off very much of late years, owing to all the near and easily accessible regions having been denuded.

Unfortunately, I landed at Barahona in Holy Week, when work of every kind is prohibited; and my requirements for a troop of horses were met, at first, with a steady refusal by any of the inhabitants to endanger their souls in supplying me with animals for a journey at such a time. With some difficulty I eventually surmounted their objections by writing an undertaking to be responsible for their sins in furnishing me with horses for the occasion, and I was thus enabled to get away the next day. The necessity was urgent, for in about three weeks the rains would be due, and, in the rainy season of the tropics, little outdoor work could be done of the character I had before me.

Finally, on April 14th, I left Barahona, accompanied by my two companions, Señors Caminero and Cambiaso, Señor Mota—a timber

cutter and trader—and a peon as guide and baggage master, and escorted by the commander himself of the military forces of this region, General José Alta Gracia Coello. The General carried a Remington rifle and a revolver, and his crimson military saddle-cloth and purple holsters, all gold-braided and decorated with the arms of the Republic, and some brass buttons on his cotton tunic, served to indicate the rank and constitute the undress uniform of a general in the Dominican Army. The General was a pure dark descendant of the African race—it is not good form to say Negro—and proved himself to be a really good fellow throughout all the journeys, active, ever willing and obliging, considerate of others, good-tempered and patient under trials. We were all mounted on very fair pacing mustangs, and saddles and harness were equally fair; the hire of each horse was one peso per day (about three shillings), a very moderate charge.

Leaving Barahona, the road, after passing over a low shoulder of the hills, through thin woods, emerges on to a small, grass-covered savannah, flooded in the rains, then on through more thin woods and bush, and over gently rising and falling ground (the bases of the foot-hills of the dark, forested Sierras on our left), finally reaching Rincon. Nearly all the way the soil showed a white, marly loam, freely covered with rounded boulders, large and small, of a white, soft, close-grained stone. Excepting in the Rio Yacki, whose course we followed, and also in a small, stately, palm-bordered lagoon passed on our way, no stream of running water was seen until near Rincon, where there are several clear, quickly-flowing streams. Therefrom irrigation canals have been conducted, and thus the neighbourhood, which abounds in noble trees, is rich in brilliant verdure and soft shade, with plots of cultivated land, where plantains, maize, sugar-cane, cassava, tobacco, etc., grow in the most desirable luxuriance.

Rincon is a somewhat large but scattered accumulation of isolated, and more or less dilapidated, frame, palm-thatched houses, and a very plain wooden church, erected on the summit of a low hill overlooking a fine sheet of fresh water, the Laguna Rincon, 3 miles wide, 5 miles long. This lagoon, at certain seasons of the year, abounds with fish to an enormous extent; numerous fish-currals jut out from the shores, into which the fish are driven, then caught, killed, salted, and exported to all parts of the island. The lagoon has an outlet to the River Yacki, which river washes the base of the hill on which Rincon is situated. The river is quite navigable for barges down to its mouth, and for 15 miles up-stream. At the mouth, however, a bar prevents exit of the craft to the bay, only shallow canoes being able to cross it.

Rincon and its immediate neighbourhood are said to contain about four thousand inhabitants, engaged in agriculture, timber-cutting, stock-raising, and fishing. There is also a garrison of four hundred soldiers. To the south of the town, about 6 miles away, rises the very imposing

pine-tree and "cloud-capped" summit of Monte Laho, or Le Haut (5000 feet high); from its base to its summit, and extending all over the range of which it forms a part, the surface is covered with woods and forest, green in the valleys, but less so on the ridges of the spurs.

Leaving Rincon we proceeded in this direction. The road, after descending from Rincon, passes for about 2 miles through level, well watered and rich land abounding in woods and scattered homesteads and plots of cultivation. Beyond, the road or trail rapidly begins to ascend, and is extremely dry, stony and scoured with deep gullies. A thin vegetation of bush and small timber covers the hollows and hill-sides, where some indifferent lignum-vitæ were observed. Further on, as the track becomes steeper, more stony and winding, the vegetation is still poor, but lignum-vitæ is more abundant. In one and a half hours' ride is reached the deep gorge of Cañada Fonda, whose lofty perpendicular sandstone walls and deeply scoured dry channel indicate what a mighty rush of waters there must be here in the rains. The height is 1850 feet; mahogany now occurs, the vegetation is more dense and trees are more lofty. Onwards, the ascent becomes more and more steep, the path often being only the boulder-strewn beds of dry watercourses shut in by steep hill-sides densely clothed with forest. Orchids are most abundant, mahogany and lance-wood are constantly in view, and on the higher levels very fine cedars are met with. Finally, after a severe climb of four hours, the summit of the pass is reached, 3590 feet high. The situation is picturesque and delightful, the air is cool and fresh, being 65° at 5.30 P.M. Rich forest of fine timber is seen in all directions, and although mahogany has not been seen after 2900 feet of elevation, here are great quantities of cedar 4 to 6 feet diameter. The soil is rich and most fertile, and although too high for coffee or cocoa, there is an abundance of localities lower down each side of the ridge admirably adapted for the purpose. High above the pass rises the lofty summit of Laho, its dark mass wreathed in white drifting clouds of mountain mist, in the intervals of which are seen masses of tall pine trees rising high above their surrounding vegetation. Laho is about 5000 feet high.

Descending the southern slope, the track winds in and out of deep gorges, or climbs over sharp spurs of the steep hill-side through dense forest for 800 feet. Here at nightfall we found a small farm known as Pueblo, and to our chagrin, deserted. This had been our destination for the night, consequently, foodless and shivering in our thin garments in the fresh mountain air we passed the night. At 5 A.M. the thermometer registered 59° and at 7 A.M. 64°. Pueblo is situated by the side of a long valley extending to the sea. On its opposite side is a long spur of hills reaching from the main range to the coast and known as Las Lomas Ruperto.

Returning to Rincon we proceeded westwardly the road traversing

the fertile regions of its near neighbourhood watered by the Rios Savello and Bartollo. There are here many plots of cultivation and homesteads, and also many others nestling amidst the palms bordering the southern shores of Laguna Rincon; but at half an hour's ride from Rincon, the road passes through very thin leafless woods of small timber parched dry with drought; the watercourses were all dry, and the soil, naturally rich in the elements of fertility, was baked hard, cracked and dusty.

Near the south-west extremity of the lagoon a track leaves the main trail for Pueblo de la Puenta de Loma, a small hamlet of thirty to forty houses about 2 miles away. On leaving the lagoon the road pursues a north-west direction towards the low hills of Salinas, crossing first the flat grassy Savannah de Buena Vista, and then proceeds over gently rising ground, a buff-coloured sandy marl, firm to the tread in wet or dry weather, and thickly covered with many varieties of cacti, aloes and thorny mimosa.

Meandering amongst the low hills of the settlement known as Salinas, the sweet-water river of that name serves to irrigate the little valleys of the place, and as the road follows up the course of the stream, it proceeds through densely shaded avenues of very fine trees, or skirts numerous "canucos" or cultivated plots, each one with its isolated homestead. The settlement is only eighty years old and contains about one thousand five hundred inhabitants, whose houses are much scattered.

Cattle-raising on the plains of Neyba is the main industry. The temperature is here very high, the thermometer registering 96° under the breezy shelter of the thick grass roof of a house.

A short distance beyond Salinas is a low range of bare brown hills extending west for about 4 miles, from 200 to 300 feet in height. These have long been celebrated as the Salt Hills. Exaggerated accounts had been given to me of their "springs of salt brine" and "glistening palisades of salt," which I failed to perceive. Undoubtedly there are in these hills, and extending throughout their length, several great veins of very fine white crystal rock salt 10 to 15 feet thick, but as the surrounding material is soft and much resembles in appearance dry London clay, timbered galleries and shafts would be necessary to get out the salt, and the value would not repay the expense except for local requirements, for which it is much used. There is also white marble in these hills.

From these hill-tops a very extensive view is obtained over the level Savannah de Neyba, covered with the sad grey of thorns and cacti which, stretching far away north to the Rio Yacki, forms a great plain without a break in its level surface or monotonous colour, without a blade of grass or living thing: a veritable desert. In the rainy season, however, it is covered with rich grass, and forms a huge grazing ground for cattle.

From Salinas to the Rio de las Marias the road crosses this Savannah. It is not quite so flat as it appears, as it very gently slopes east and west, to the Lagoons Rincon and Enriquillo, and north-east to the Rio Yaoki. The height of the divide is, however, only about 155 feet above the sea. It is a dry, arid, wind-swept region in this season of the year, and contains about 170 square miles. On this exposed plain, with its heat-radiating surface, the warmth of the rays of the sun from a cloudless sky resembles that of the front of a furnace, but it is rendered endurable by the fresh sea breeze which constantly sweeps over the Savannah, driving the fine particles of the dry soil into long drifts to the leeward of the clumps of parched and drooping thorns and cacti. Notwithstanding the desolate aspect of the weird-looking vegetation, such as cacti of every imaginable form, size, and variety, mingled with thorny mimosa sadly draped with the grey filmy masses of Spanish moss streaming to the breeze, still, the fresh breeze, the bright light and the rapid pace we travelled over the firm smooth soil, rather tended to a feeling of exhilaration than of exhaustion or ennui. Although the thermometer registered 134° in the sun, the air was so dry and the breeze so strong, that the perspiration evaporated as soon as it occurred.

The route is often intersected by extremely tortuous and deeply scoured dry watercourses, indicating a heavy rush of waters in the rains. Not a stone is to be seen, and in the watercourses the marly soil is deposited in horizontal strata. I am led to the belief that this valley of Neyba has gradually been raised by deposited denudation from the adjoining mountains, which has eventually separated the salt water of Laguna Enriquillo from what once formed part of the sea. I further believe it to be not too extravagant to consider that the whole of the mountain ranges on the south side of the valley formed a separate island divided by a strait of the sea from the main or northern island. Throughout the valley all stones and rocks, large and small, whether on the surface or exposed in washouts, are rounded as the pebbles of a sea-shore. Extensive and solid beds of coral are often exposed along the shores of Laguna Enriquillo, which has retained its salt water, because, unlike the other lakes, it has no outlet or overflow; Laguna Rincon is 18 feet, Marias 160 feet, Fonda 190 feet, Limon 155 feet above sea-level, whereas Enriquillo is practically level with the sea. The aqueous evaporation in the dry season over the considerable surface of Enriquillo is probably more or less in volume equal to the amount of water from the few small streams which enter it.

The Savannah terminates at the Rio de las Marias, from the other side of which river, and extending to Neyba, and from Barbacoa in the west to Cambronal in the east, is a well-wooded, fertile tract of about 12,000 acres where lignum-vitæ and fustic are most abundant.

The town of Neyba is a well-laid-out town of broad straight streets at right angles to each other. A very plain and simple wooden

structure is the church in the northern and highest part of the town. It is a prominent object from many distant points of view, and formed one of the main points of triangulation * for the construction of the map herewith submitted, the details of which were sketched in whilst passing through the country seated on the back of an ambling horse, whose even movements allow of taking notes. A small pocket-compass (not too lively), a pencil, book, aneroid, and a watch for distances, show by this sketch map what can be done by simply riding through a country.

Good Friday was the day of my arrival, and it was truly remarkable to observe the throngs of orderly and gaily-dressed people which filled the streets and surrounded the church densely packed with devotees. As in most Roman Catholic countries the church bells are silent on this day; but some men energetically paraded the streets and made day and night hideous with the sounds of lusty wooden clappers. Most of the men carried fighting cocks, and the next day cock-fighting was the universal amusement, accompanied by betting, excitement, and shouts of glee.

There are supposed to be about five thousand inhabitants in the town and its neighbourhood; but it is only a rough estimate, as no census has been taken. There are a few stores, if one may so designate the mean little stocks of dry and wet goods observable. The fact is, the major part of the goods of the outside world required by the people of this region are mainly obtained at Port-au-Prince in Haiti, and smuggled over the frontier by Laguna Fonda.

Inquiries made at Neyba failed to elicit any information whatever as to any reported minerals in the surrounding region.

From Neyba to Esterro is about 2 miles, and all the way lignum-vitæ and fustic are sighted, the former is rather second-rate, but the fustic is very fine. There are also many caya amarilla (*Zanthozilum coriaceum*), a tree much resembling satin wood, but without the odour.

Esterro is a small collection of about one hundred inhabitants, and a little further on is Barbacoa, a large scattered settlement. The people appear quite numerous, and all, without exception, are well-clad and perfectly independent, for a very small amount of labour supplies their simple requirements. This neighbourhood is dotted with homesteads and plots of flourishing cultivation, and upon examining into the cause of such productiveness in such a dry season and generally dry soil, it was found that near the lagoon are many springs of delightfully cool, fresh water, flowing over rocks. The inference is that these springs come from the highlands at the north of Neyba, and the water filtering through the deposited humus or disintegrated material of the hill-sides, passes below the soil over impervious strata and finally emerges at a low level near the lagoon; if that be so the existence of

* By prismatic compass.

this subsoil flow of water is quite sufficient to account for the fertility of an otherwise waterless region after a long drought. It is similar to the fertile oasis near Azua both in cause and effect.

At Barbacoa, hearing of a reported existence of salt some way up the mountains, I made an examination. The distance is about 3 miles, and mainly up the white boulder-strewn beds of hill-side gullies. The soil of the land traversed is a light yellow marl, and, where exposed, shows dense underlying beds of soft rounded white stones. The vegetation is thorn and cactus, a region now valueless; but it might be made productive by making dams in the numerous dry watercourses to catch the water of the rainy season. In times gone by some good timber grew here, if one can judge by the stumps of big trees in a locality whence forest has now quite disappeared. After a tough climb up 500 to 600 feet, the alleged salt deposit proved to be merely the surface of a limestone rock, between some small interstices of which a little moisture was oozing, and, as it was probably charged with some acid, it deposited, in the shape of foam, a very small quantity of saline matter on the rocks. To see this, a dollar had been paid the guide, and a severe climb on foot on a sultry tropical morning had been undertaken before breakfast. But the ascent served to show that the whole of the region, between Neyba and the hills at the rear, was covered with only thorns and cacti.

At Barbacoa, and up to about 60 feet above the level of the lagoon, are vast beds of coral and coral rock in every shape and form, interspersed with numerous marine shells. There is no doubt that the coral is solid rock and not a superficial deposit.

From Barbacoa to Postrerrios the road passes through a dry and uninteresting region. Two streams only of running water intersect the route in a distance of 12 miles; many coral reefs were met with on the way, and also many dry but deeply channelled watercourses. The ground is undulating, dry, and parched, and the vegetation is thorn and cactus, the latter occasionally occurring in dense masses. Even to 2 or 3 miles inland the same dry, arid appearance prevailed. On the more distant mountain slopes the vegetation is greener, but not of any degree of richness.

At the house of a Señor Gregorio Sierra, a little west of the Rio de los Rios, is a very curious relic of the past in the form of an ancient six-pronged anchor. This relic, in conjunction with the existence of such extensive beds of coral around the lagoon, and its salt water and low level, seems to indicate that Laguna Enriquillo was once an arm of the sea. The anchor was found embedded in the shore of the lagoon, near Bebedeiro, 50 feet above present water-level, by General Soza, when he was living here as a workman, in 1844, and employed by him on a boat which he then used on the lagoon.

The valleys drained by the Rio de los Rios and its feeders are an

exception to the poverty of the vegetation of this region, for there the presence of water, as elsewhere, causes the curiously, apparently dry and arid, but really fertile soil of this valley to blossom with vegetation, and much valuable timber is there to be found.

After passing the Rio Postrerrios, one again enters an extraordinarily fertile oasis. Irrigation channels intersect the road, and in all directions are plantations of the greatest luxuriance, mainly consisting of cane, plantains, maize, a little tobacco, and cassava. The people of Postrerrios seemed to be most industrious and energetic; our host especially, a young man, was so vivacious, and withal so hard-working, that it was quite refreshing to meet and know him in this land of "dolce far niente." "Still," as he said, with a shrug of his shoulders, "here one can grow anything, but we can only give it to our cattle."

From Postrerrios I proceeded north-east with the view of examining the reported rich lands in that direction. Beyond Postrerrios there is a short stretch of thorns and cacti until the narrow valley of Postrerrios is reached, where fine lignums are sighted about 40 yards apart, fustic much closer, a little small size mahogany and great quantities of candelon (*Colubrina ferruginosa*). There are clumps of lance from 10 to 20 yards apart; some of this is very fine, tall, straight and 10 inches thick; it is mostly, however, under 6 inches at the base, being little more than good-sized saplings. There is no satin wood or cocus wood.

A little before reaching the small homestead of Guayabal the Rio Postrerrios is found emerging from under the rocks of the base of a hill in a quickly flowing stream 12 feet wide and 12 feet deep. Guayabal is but a hut or two owned by a Haitian negro and his family. Their surroundings were squalid in the extreme, but here we passed a night. The place is situated 900 feet above sea level, at the end of a lovely valley surrounded by mountains covered with woods, and despite the fact that the head of the family was practically lord of all the land within sight, with a rich soil capable of producing any tropical products, as could be seen by the negro's adjoining plots of cane, tobacco, cassava, bananas, yams, beans, coffee, etc., yet nowhere could be witnessed more squalor, filth and savagery.

From this point all signs of the drought disappeared, the vegetation was fresh and luxuriant, the soil being kept moist by mountain dew. On the hill-sides surrounding the valley of Guayabal are mahogany and fustic, and an abundance of fine lance wood.

Leaving Guayabal, crossing the dry gorge of the Cachoncito and proceeding in an easterly direction up a wide valley drained by La Estella, following the tracks made in 1844 by General Soza for the purpose of removing mahogany, one sees in the valley an abundance of fine lignum-vitæ (rough bark variety) tall, round and straight, and up to 24 inches diameter, mingled with fustic and lance-wood, and on the surrounding hill-sides there is very fair mahogany and abundance

of fine lance-wood. The road continues to ascend the hills by very steep ascents, with deep gorges in the hollows; hill-top and valley are all alike covered with thick woods abounding in membrillo (*Cerasus occidentalis*), the wood of which has a scent like that of aniseed, and from which a perfume is manufactured in St. Domingo city. Lance-wood is seen in all directions, and by the side of the track are many old rotten logs of mahogany. Mahogany is small and not very abundant, but away from the track the slopes of more distant hills show masses of the light green small foliage of what must be numerous and fine mahogany trees 20 to 100 feet apart. Lance-wood is abundant, but only about 20 per cent. is good for felling. Fustic is good, and one sees in various places in the woods from five to nine within sight in a radius of about 80 feet. Many old coffee and orange trees exist in the woods, the tombstones of a departed era of prosperity and activity in what is now a wilderness. Higher up the hills cedar appears, some trees 3 to 4 feet diameter. Finally at 11 A.M. an elevation of 2180 feet above sea-level was reached; the temperature was delightful, 76° Fahr., the air of the finest and the soil very rich. Here the trail ended, but beyond and around are higher elevations all covered with rich but yet second-growth forest.

Some years ago a trail existed leading on to the table-lands distant about three hours' journey, but it is now overgrown, and would require ten men working five days to clear it. This table-land is reported to be covered with dense virgin forest and to be most abundant in mahogany, fustic, lance-wood and cedar. This statement is probably true, because the same conditions were eventually found on the adjoining table-land of Los Piños. The table-lands are generally known as Los Manieles, and the regions of the ascent to them as Los Tibisiales.

Due south of Postrerrios is the Island of Cabritos, appearing as a low-lying sand-covered land dotted with bush. Many curious Indian relics have been found there, and many are believed to still exist, as well as numerous goats; but, most unfortunately, neither at Postrerrios nor at any other place on the shores of the lake, could be obtained a raft, canoe, boat, or any means of getting to the island. This island is especially interesting, as it was the headquarters of the unconquered last cacique of the Indians. Of the millions whom the Spaniards found in the island not one individual is left.

Leaving Postrerrios the road quickly quits the pleasant cultivated land, and, skirting some low hills, passing over dry and stony lands of bush and scrub, it eventually reaches the shores of the lagoon, where the wavelets curl and break like those of the sea. For nearly 2 miles the road is hemmed in between the lagoon and bare, brown, steep hill-sides; then the hills retire somewhat from the shore, where a stream enters, moistening the soil and fostering the growth of a narrow belt of forest. Here, at the foot of the hills, by the side of the stream and road, is a

spring of mineral water, called by the people "the sulphur waters." The water is clear and tasteless, but the odour is quite offensive, like that of sulphuretted hydrogen. An emerald-green slime is deposited on the rocks covered by the waters, and every kind of vegetation is killed by contact with the water.

The road continues for about 1½ miles to more or less skirt the shore, passing through woods containing some lance-wood, then enters on slightly-rising ground abounding with the rich cultivations of La Discubierta. Irrigation channels are again met with, and again they are the sole cause of fertility; but here they are not conducted from a stream of running water, but from natural springs, bubbling from the earth as at Esterro and at Azua. The scattered plots of cane, plantains, etc., extend about three quarters of a mile in length, and yet between the plantations one sees the dry and apparently arid soil, bearing only the thorns and cacti, which is so characteristic of this region. It is evident proof that the soil is eminently fertile when supplied with water.

La Discubierta is a collection of separate farm homesteads, and its population attend to their home agriculture, and raise stock and cattle in the valley to the rear of the settlement. Amongst their other occupations is that of bee-keeping, an industry which, in fact, is very general throughout all the settlements of the region from Barahona to Laguna Fonda, and the wax and honey form no inconsiderable portion of the exports at Barahona. The process adopted is a very simple one. The stem of a soft wood palm is cut into lengths of 3 feet; the interior of each piece is cleared out, leaving a hollow cylinder of 12 to 18 inches diameter. These cylinders are then laid horizontally on the ground near the house. The bees speedily adapt them as hives, and fill them from end to end with combs.

From La Discubierta an exploration was made of the highlands to the north-west. A few minutes' ride over the stony land and bush brought us to the foot of the hills, where a steep climb led us up the gorge of a dry watercourse, filled with huge rounded boulders. On the hill-sides, about half-way up, is a fair supply of lignum-vitæ, and in the gorge are clumps of lance-wood, but small and distorted. On reaching the summit fairly thick forest appeared, covering an undulating table-land. Quite a number of clearings had been made for plantations. Mahogany is repeatedly seen.

There is no lignum, fustic, satin-wood, or cocus-wood, but some fine cedars are occasionally seen. The elevation of the plateau is 1680 feet above sea-level. The climate is warm and humid. The soil, a rich, dark, vegetable mould, is most admirably adapted for coffee and cocoa.

Leaving Discubierta the road passes round the gently-rising ground of Savannah-en-Media, which forms a cape in the lagoon. Here the country is again dry, and thinly-covered with scrub, thorns and cacti;

dry, brown, bare, and uninteresting, are alike level ground and hill-side all the way to Bebedeiro, where plots of cultivation and woods again appear, and in which fustic abounds; again, in the bush around Boca de Cochon and Tierra Nueva it is even more abundant. On the hill-sides, to the north of this place, the light green foliage of lignum-vitæ, and of almacigo, furnish nearly the only green seen on the otherwise brown surface of these hills; but the loftier and more distant hills are abundantly covered with green verdure. The resin of the almacigo furnishes the incense of the churches.

From Boca de Cochon the ground rises by imperceptible gradients. The soil is good, but dry and parched. The vegetation resembles somewhat that of a fruit orchard, amongst which are numerous lignum-vitæ, some as much as 3 feet diameter, and of most desirable quality and conditions.

The shores of Laguna del Fonda, half of which lake is in Haitian territory, consist of sand and mud; the water is brackish, but quite drinkable. North and south the hill-sides slope to the water's edge. On the shores were seen lying many old mahogany curls,* and their appearance of age indicated how neglected has been this industry of late years. The land between Lagunas Enriquillo and Fonda is gently undulating and covered with bush and scattered trees of small growth. The soil is eminently fertile when supplied with water. The settlements of Boca de Cochon, Tierra Nueva, and Bebedeiro, consist of a number of scattered homesteads, where the people seem to be very poor, and the homes are little more than a shady place in which to sling a hammock to sleep in or to avoid the rain.

Returning to Boca de Cochon, we proceeded to explore the south side of Laguna Enriquillo. From Boca de Cochon the road soon strikes the low sandy-mud shores of the salt-water lagoon, and continues to skirt it until near the Arroyo Blanco stream. Up to this point the ground traversed is tame and uninteresting, low-lying land thinly covered with scrub and thorns. At Arroyo Blanco another plot of cultivated land occurs, watered by irrigation channels, and blooming with the rich verdure of woodland. Many houses are scattered about here, and the fields of cane, etc., are filled with rich and succulent products.

At Gemani, a little further on, is another small group of homesteads. Here the expedition was joined by the Commander of the Forces of this region, a practised woodcutter, who accompanied the exploration as a guide to timber lands. At this place are also mineral springs, similar to those on the other side of the lagoon, and also some very good

* A mahogany curl is 4 to 6 feet in length, and is cut from the trunk from just above the junction of a branch. It is very valuable when the two hearts of the trunk and the branch are separate and distinct at the end of the curl, for then the intervening wood offers the finest grain for veneering purposes, and, owing to its size, it is portable on horseback, whereas the logs are not, owing to their weight.

lignum-vitæ trees, but they are confined to a very limited area, not perhaps more than 100 acres.

Leaving Gemani the road takes a southernly course, winding in and out of valleys, and over ridges 400 to 500 feet high, all alike brown and parched, and practically devoid of vegetation of any value. But further to the south on a range of hills (Las Lomas de Cavan) the guide stated that mahogany and cedar are abundant, but have never been worked; the soil is good for coffee and cocoa, and a distant view showed the hills to be well covered with forest. This region has long been famous as the haunts of Maroon or runaway negroes, so long, in fact, that men and women have been captured there in a state of absolute savagery—"wild men of the woods."

All the hills and land between Lagunas Limon and Enriquillo are only thinly covered with scrub, thorns, and cacti, but the hills on the south side of Laguna Limon are densely covered from base to summit with very fine timber. An ascent was made to the height of 950 feet above the sea with very satisfactory results. In the plain at the west end of Laguna Limon is an abundance of excellent lignum-vitæ of both smooth and rough bark, and all the way up the hill-side, either in the gorges or ridges of spurs, is encountered in great abundance lignum, fustic, lance-wood, and some satin-wood, 15 inches in diameter. In the upper region mahogany is also abundant; there are numerous trees 4 feet in diameter, tall, straight and round, and 25 feet to lowest boughs. This is certainly the finest timber region yet seen, and the hills continue to rise to quite 2000 feet, everywhere covered with fine timber; mahogany and cedar being especially abundant in the upper regions.

The water of Laguna Limon is fresh and abounds with caymans. The settlement of Limon is a small group of homesteads of stock and cattle raisers, as is also Florida at the east end of the lake; with these exceptions, there is nothing to note, either as to habitations, or timber, until the road skirts the little cove on the shores of Laguna Enriquillo, near La Furnia, where there is some lignum-vitæ, and a few houses; and also at Abaitoa. The road now skirts the shores of the lagoon, having steep hill-sides on the right. No timber of any consequence is noticeable, but another mineral spring is here met with, producing precisely the same unpleasant odour as the two already mentioned. It gushes out from the hill-side and meanders through a beautiful grove of palms, forming certainly the prettiest scene on the generally uninteresting shores of Enriquillo; but here the road is quite impossible for any wheeled vehicle, for huge boulders cover the steep side-long ground and render locomotion even on horseback a difficult matter. As the hills recede from the lagoon the land again becomes flat, somewhat wooded and cultivated, and houses are often met with. San José is quite a little village, and from here onwards to Las Damas

the vegetation improves, and plots of cultivation are more frequent. The Rio de las Damas is a good stream of rushing water, providing excellent water-power for any purpose.

The town of Las Damas is a great hollow square of houses, with a few parallel streets at the rear, built on a flat. The houses are neat, plain, and as comfortable as one may expect to find in a country town in this land. There are more white inhabitants than one usually sees, and some of the women are handsome, in fact, Las Damas has long been noted for the charms of its female inhabitants, some of whom are quite types of Spanish beauty.

An excursion was made to the summit of hills south-west of Las Damas. The Rio de las Damas flows from the west through a savannah of bush and grass, a great place for cattle. The main range of mountains to the south is well wooded and lofty, the summits showing pine-trees. This range of mountains is known as the Sierra Borohuca, and up to quite recent times was occupied by Maroon or refugee negroes. There is no track now existing in that direction. Some thirty years ago some mahogany curls were exported from these hills, and mahogany is reported to be fairly abundant. Undoubtedly they are well wooded, and there is no reason why they should not produce all the timbers found in similar localities and conditions.

From Las Damas to Neyba the road passes over a flat all the way; it is quite devoid of interest in the way of vegetation. There are long, bleak stretches absolutely devoid of anything green, and a few thorns and cacti comprise the rest. Many deeply-scoured dry channels of surface drainage are passed on the way, and between Cachon de la Gruasumilla and Rio de las Marias the soil is wet and very slippery, but firm. Here, in the rains, the waters of the lake rise and extend thus far, so flat is the land here.

From Neyba to Cambronal the road passes through open woodlands, which are the most prolific lignum-vitæ and fustic-producing districts of the whole of the region examined. Here are all sorts and conditions of both trees, good, bad, and indifferent. Some of the lignums are perfect, 30 feet of straight trunk, round, free from knots, and 28 inches thick. Others are most indifferent, and in places there is an average of thirty lignums and twenty-eight fustics to the acre; and near Cambronal that is a fair average. This lignum-vitæ and fustic-bearing region is estimated to contain 12,800 acres. Half-way to Cambronal the road passes between a short range of bare hills on the left—the Sierra de los Remedios—and a lagoon thickly studded with palm-groves on the right, known as Laguna de las Marias. Just about here the lignums and fustics cease, but are again found in great abundance beyond the lagoon.

Cambronal is a wooded region, threaded by canals and streams in all directions. The soil is fertile, and the locality possesses great potentialities for agriculture after the lignums have been cleared out. There

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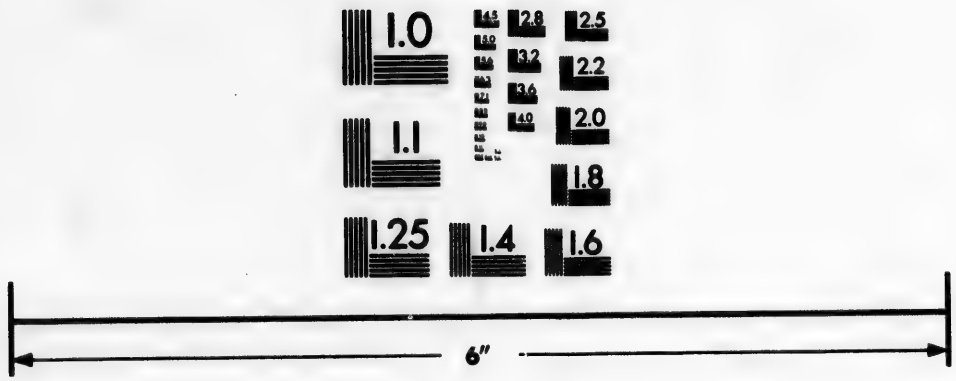

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are a good many inhabitants scattered about, and many small plots of cultivation, but there is no energy whatever amongst the people.

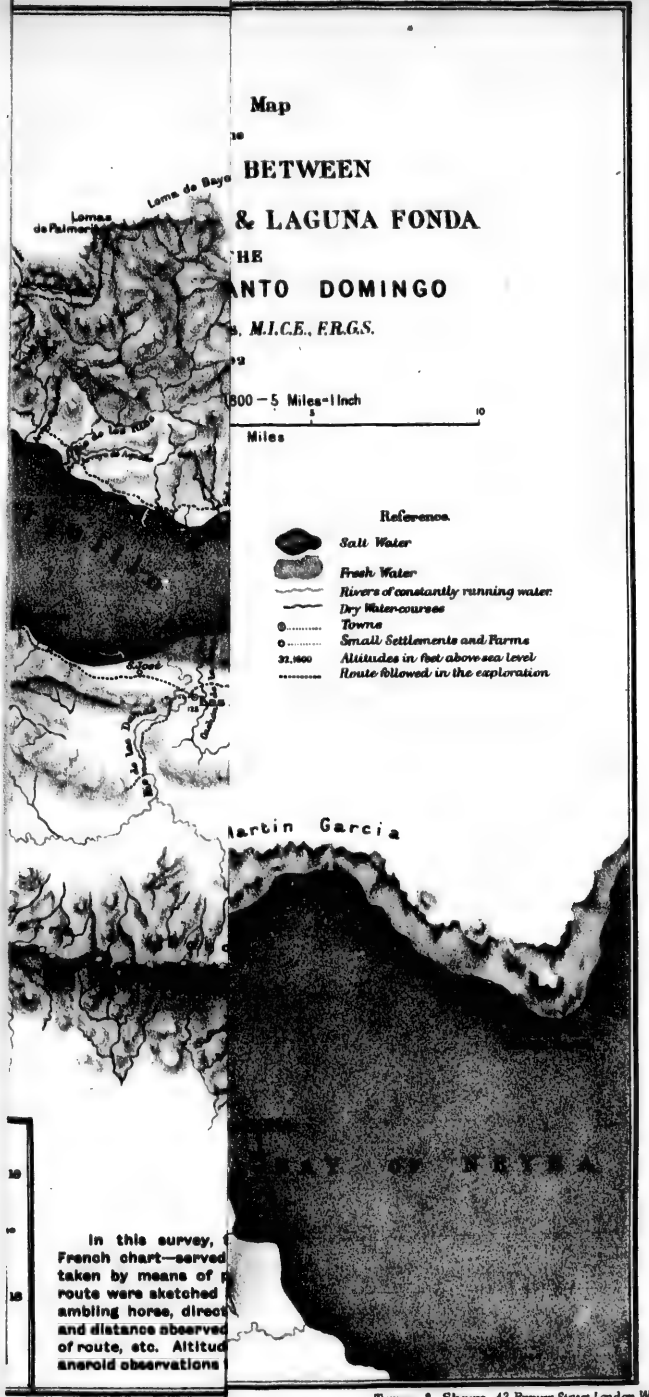
From Cambronal to Salinas is a hot, dusty, uninteresting ride across the sun-blasted and wind-swept dry savannah, sometimes across stretches of land absolutely bare of any vegetation whatever; at others through lanes amidst dense masses of candelabra cacti and mimosas, draped with the weird, filmy, grey masses of Spanish moss.

From Salinas to Barahona I completed a journey through what had been a most certainly interesting and little-known region, yet full of historical memories and physico-geographical problems not lightly solved.

From Barahona to Santo Domingo, partly by land and partly by sea, my travels terminated, with the exception of a few days' exploration of the gold regions to the north-west of the capital, which, considerably to my astonishment, I found to possess much of the characteristics of the best-known gold regions of Brazil with which I am familiar.

Before concluding, I must mention that there is no detailed English chart of the interesting southern coast of Santo Domingo.

Besides Barahona there is another very fine harbour of refuge, the easily-accessible but land-locked Port of Salinas, where the vessels of Columbus sought refuge in a gale, and which to this day has not been surveyed. As a natural port and harbour it is perfect, with deep water alongside the shores.



In this survey, French chart—served taken by means of route were sketched ambling horse, direct and distance observed of route, etc. Altitud aneroid observations

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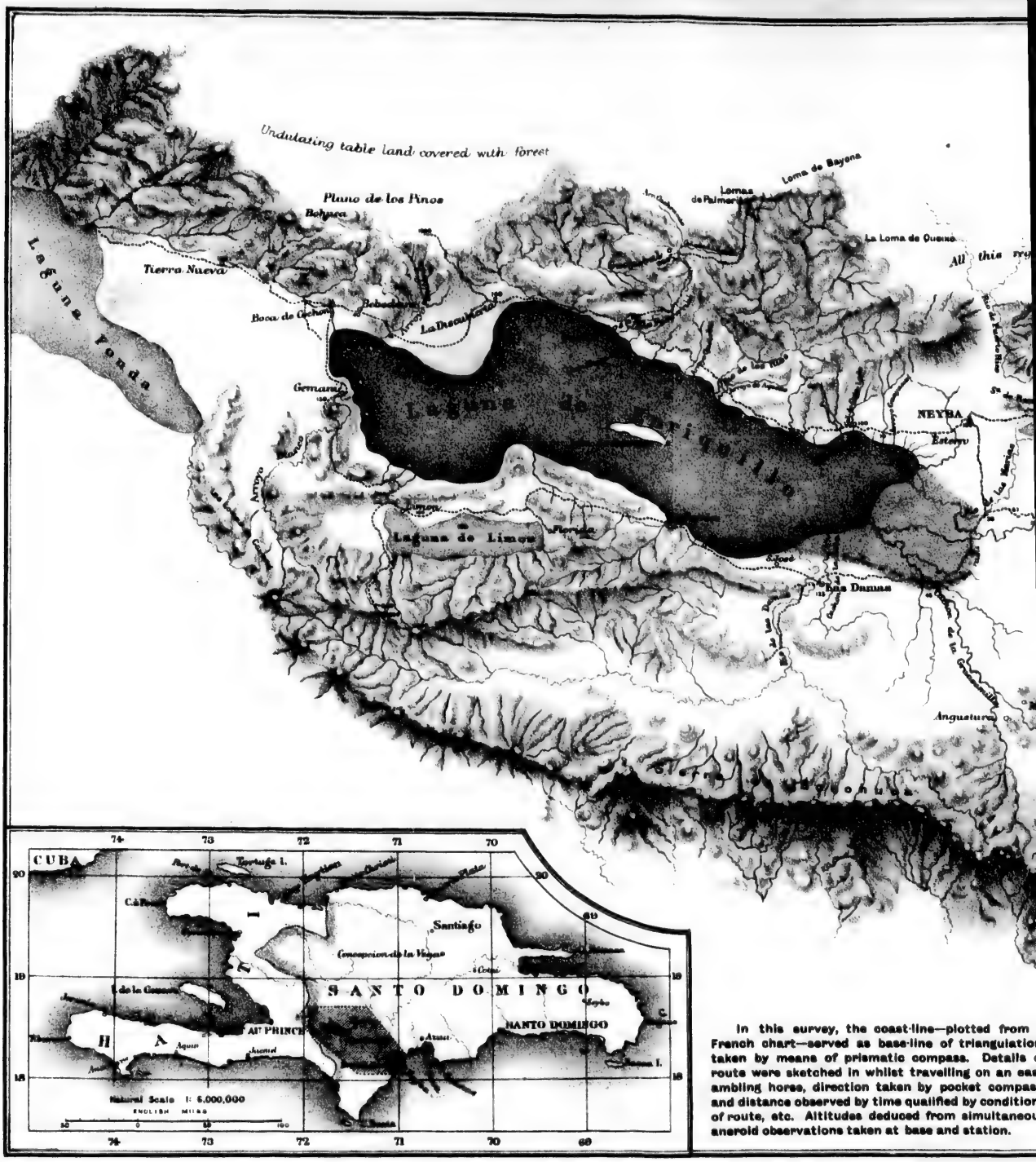

In this survey, the coast-line—plotted from French chart—served as base-line of triangulation taken by means of prismatic compass. Details of route were sketched in whilst travelling on an easy ambling horse, direction taken by pocket compass and distance observed by time qualified by conditions of route, etc. Altitudes deduced from simultaneous aneroid observations taken at base and station.

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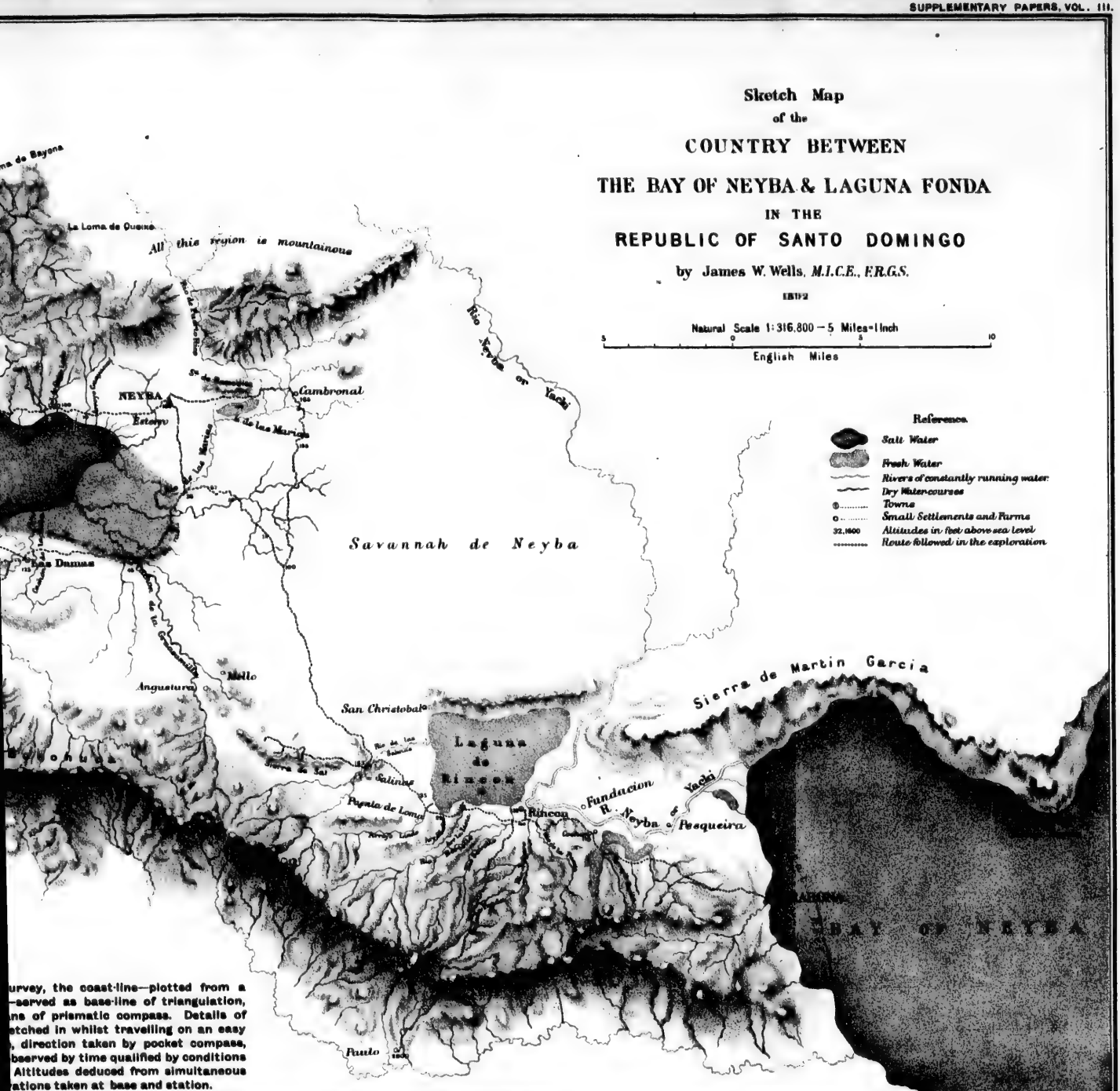

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VOL. III.—

THE CHATHAM ISLANDS:

THEIR RELATION TO A FORMER SOUTHERN CONTINENT.

BY

HENRY O. FORBES.

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THE CHATHAM ISLANDS:

THEIR

RELATION TO A FORMER SOUTHERN CONTINENT.*

By Henry O. Forbes.

Map, p. 638.

The Chatham Islands—the portion of the Earth's surface which I take to-night as the text of my observations—are of very small dimensions. Few of my hearers would I suspect care to be called upon suddenly to indicate their position on a map of the world. There is, moreover, more than one Chatham Island delineated on our maps. In the Galapagos Archipelago off the west coast of South America we have an island of this name, and another is situated in the Andaman Group in the Indian Ocean. The Chatham Islands of which I intend to speak lie on the extreme verge of the western hemisphere, being just to the east of the 180° meridian, and 500 miles east of Port Lyttelton in the south island of New Zealand. In size they are all very small except two, and from a commercial or strategical point of view they are of little or no importance. Wharekauri, the largest of the group, is 36 miles long in an east to west direction, and 27 miles at its widest part from north to south, while Rangiauria, the next in size, is 9 miles long by 6 miles wide. They were discovered by Lieutenant Broughton just over a hundred years ago when in command of H.M. Brig *Chatham*, one of the vessels that composed Vancouver's expedition to the north-west of North America in 1791. These islands soon after their discovery became the rendezvous and victualling ports of the sealing and whaling vessels which prosecuted their trade in the South Pacific and Antarctic Seas, an intercourse which later on proved very disastrous to the natives. The Chatham Islands were in 1840 visited by Mr. Hanson in the *Cuba*, and purchased by him as agent of the New Zealand Company. He had on board the distinguished naturalist to the company, Dr. Dieffenbach, who wrote an account of his visit, which was read before this Society in 1841, and printed in Volume XI. of our *Journal*. After that date there are few records of any importance of the condition of the islands till the year 1867, when they were visited for scientific purposes by Mr. H. H.

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* Paper read at the Meeting of the Royal Geographical Society, March 13th, 1893.

Travers, principally in the interests of botany. An account of their flora was written, from the herbarium collected on that occasion, by Baron F. von Mueller, of Victoria, and forms a valuable contribution to the natural history of the region. Mr. Percy Smith, the present Surveyor-General for New Zealand made a survey of the group in 1869, and contributed many additional data to our knowledge of them. Mr. Travers made a second botanical excursion thither in 1871. I believe that in 1855 Mr. (now Sir Walter) Buller also visited the group. Since Dieffenbach's visit, now half a century ago, considerable changes have taken place in the outward aspect of the islands. The extensive forests that grew on many parts of the land have mostly disappeared to make place for sheep pastures or cultivated fields. The Morioris, or original inhabitants of the Archipelago, were first thinned out by an incursion of Maoris from New Zealand, who had themselves transported thither for the express purpose of feeding on them. They have now all but vanished, and only a family or two remain of a race that within the next decade or so will have to be numbered with the Tasmanians and with the wonderful birds that once inhabited with them this isolated spot of land. The Maoris, who since that incursion have possessed, by right of seizure, I suppose, a considerable part of the land, are also fast decreasing in number through disease and drink. The greater part of the islands, therefore, is owned by European run-holders, and stocked with sheep and a few cattle. As my stay was limited to three weeks I could visit only the central and southern portions of Wharekauri (the main island).

The whole surface of the islands, especially of Wharekauri and Rangiauria, is covered with a bed of peat in places over 40 feet in depth—deeper in the northern than in the southern portion of the former—traversable in safety only by those well acquainted with the country; for to the inexperienced eye there seems in most places no difference in the surface which can carry with safety both horse and rider, and that on which the lightest-footed pedestrian cannot venture without being engulfed. The surface of some of the larger and wetter depressions in the ground is covered with a brilliantly coloured carpet of luxuriant mosses, emitting an aromatic fragrance, spread out in gaily-coloured patches of rich commingled green, yellow, and purple, and endless shades of these, warning the traveller of the existence of dangerous bogs beneath, and brightening miles of treeless moorland, which, but for those floating gardens, would be uninviting and uninteresting. In many places all over the islands the peat is on fire, and has for years been smouldering underground, or glowing in the exposed faces of the great pits which have now been burnt out. Dr. Dieffenbach mentions their existence at his visit in 1840, and states that the combustion had begun before 1834, and "may," he says, "indeed be traced to a much earlier period, and, in consequence, the soil in the neighbourhood

is gradually sinking." These fires, as far as I could gather, had been burning in one part or another of the island ever since Dieffenbach's visit. Whether the soil has been lit accidentally or on purpose, or has spontaneously become ignited through the decomposition of the peat and lignite, I could not ascertain. A peculiarity in the main island that at once strikes the visitor, is the occurrence of many lakes and tarns. These lakes are, for the most part, on the eastern side, at the back of the low hills facing Petrè Bay. The largest is 15 miles long, over 40 miles in circumference, and about 10½ miles at its widest part; and, therefore, occupies a large portion of the area of the island. Some of the tarns occur even on the highest part of the southern highlands, which ascend to about 1000 feet.

My purpose, however, is not to dwell on the Chatham Islands themselves, but to make them, as I have said, only the text, round which I shall group the observations and opinions I have to lay before you to-night. In January of last year there was brought to me in New Zealand from the Chatham Islands, a fragment of a bird's skull, which excited my greatest interest and surprise. As it was incomplete and unassociated with any other bones of the skeleton, I was unable to determine with absolute certainty the bird of which it had once formed a part. There was enough, however, to lead me to believe that it must have belonged to a genus—if not to the same species of that genus—of birds known to have lived only in a widely-different zoological region of the earth, separated from the Chatham Islands by nearly half the circumference of the globe. If this determination were correct, it was a discovery bearing on many questions in zoological geography of the highest interest and importance. As there was a steamer then just about to start for Wharekauri, I determined to proceed thither at once and investigate the question on the spot. Within a few days of my arrival, I had the satisfaction of disentombing from their ancient burial-ground in the sand-hills of the Waitangi beach, the complete head and the greater part of the skeleton, certainly all the more important bones, of the bird to which the head belonged, in association with those of a tall, extinct coot, and a large raven of an ancient type. I was thus able to confirm my uncertain identification of the bones, that the bird which in ancient days had lived in the Chatham Islands, was no other than a species of *Aphanapteryx*, a large and remarkable member of the rail family, which lived contemporaneously with the celebrated dodo in the Island of Mauritius. This was (till the previous January) the only place in the world where it was known to have existed, and where with the dodo it preserved its fading race down to about two hundred years ago, when both of them passed away and perished for ever from among living things. In the Chatham Islands I found the remains of the *Aphanapteryx* in kitchen middens of the Morioris, showing that in this region of the world also it had survived down to comparatively recent

date, just as the moa had in New Zealand. To find bones of this bird was, therefore, the main object of my visit to the Chatham Islands, but I had in view also to search for evidences of the former existence there of the moa, the apteryx and the weka, characteristic birds of the New Zealand fauna, and to indicate the value and importance to natural and to geographical science, of the occurrence of these birds in this island, is the chief object of my paper to-night.

It may be thought perhaps by some that I have made a mistake in the Society I have selected to read my paper before; and that not the Royal Geographical, but the Linnean, Zoological, or the Geological, was the more fitting Society for a subject concerned with biological and palæontological details. I hope, however, that I may be able to establish to your satisfaction the claim of my paper to be read and discussed here, because it is essentially geographical. The subject with which this Society concerns itself, deals not only with the configuration of the present continents and islands of the globe, and the conditions of the oceans which now surround them, but with the tracing out of the coastlines of lands that have now sunk beneath the sea, and the boundaries of the oceans in earlier epochs. The science of geography is based on all the other sciences; geology is its sister science, while biology and palæontology in an especial manner contribute evidence to geography in regard to the configuration of the land in the past. The majority of the papers contributed to this society are devoted to the physical details of areas of the globe newly discovered, or to additions to our knowledge of already known regions; while to other societies or sources of publication has been left the duty of elucidating the changes that have taken place with the lapse of ages in the geographical features of the earth, proved only by biological evidence —yet in its results a subject belonging peculiarly to the province of this Society. Nor ought the story of the rise and fall of ancient continents, and the consequent wanderings and strange vicissitudes of a fauna and flora, to prove less interesting than the narratives of personal adventure, or of the successful mapping of lakes, mountains, and rivers in freshly discovered lands which it has been our pleasure so often to listen to in this room. These features in fact, the mere discovery and surveying of which occupy so much attention, can only be fully understood by considerations regarding their origin; and the distribution of living creatures is one of our principal guides in this direction. On the last occasion on which I had the honour of addressing the Society I had to speak of personal wanderings in remote and unexplored isles in the eastern seas, and I trust you will receive with equal indulgence my attempt to-night to trace the probable wanderings of their fauna and flora across the Austral regions of the globe, and to lay before you the conclusions which, in my opinion, may be drawn therefrom.

Deduced from the study of the distribution of species, it is now

an accepted axiom that, "Whenever we find that a considerable number of the mammals [or what is practically the same thing, of flightless birds] of two countries exhibit distinct marks of relationship, we may be sure that an actual land connection, or at all events an approach to within a very few miles of each other, has at one time existed" (Wallace, 'Island Life,' 2nd, ed. p. 74). Now, besides the bones of this remarkable *Aphanapteryx*, I gathered on the Chatham Islands those of other birds now extinct there, but identical with species yet living in New Zealand, and some of them characteristic of that island. Of these I may mention the kea (*Nestor*), that peculiar parrot which has so changed its diet within recent years that, forsaking fruits, it attacks and kills sheep by eating through the back into the vital organs; the flightless wood-hen, a species apparently identical with that of the South Island (*Ocydromus australis*); a species of owl (*Glaucidium novæ-zealandiæ*) and the smaller of the two species of New Zealand hawk. In addition to these I obtained a species of swan which (though now extinct) once lived in New Zealand; and the tuatara, a curious and ancient form of lizard now absolutely confined to an islet off the coast of the North Island of the colony. The occurrence in the Chatham Islands of these species, many of which could not have crossed the intervening 500 miles of sea with the organs of locomotion they possess, proves that the Chatham Islands must have had at one time a continuous land connection with New Zealand. Its geological structure shows it to be a continental island, for though essentially volcanic, it possesses sedimentary rocks of palæozoic, secondary, and tertiary age, and its flora, in its close relation to that of its larger neighbours, confirms this opinion, as well as the shallowness of the intervening sea, where the old whalers, it is said, found soundings.

Though I was unsuccessful in discovering any remains of the moa or the apteryx, the traditions of the Morioris point very circumstantially to the existence in past ages of the Poüwa, as they call the *Dinornis*. One of the oldest of the survivors of this race, himself told me how when a boy he had seen their great bones sticking up in the mud of the lake into which the birds were driven and killed before being cooked in pits on the shore. His father, who had got the story from *his* father, had told him that the bones belonged to great birds which his grandfather had helped to kill and eat. The narrative of Tapu (as this native was named) left a strong belief in my mind that the moa did once exist here. They had, however, no knowledge or tradition of a bird that could with any certainty be identified with the kiwi or apteryx.

There is confined now to one of the smaller—though another species lived half a century ago on the larger—of the Chatham Islands, a flightless species of crake of a genus (*Cabalus*) kin to the woodhens, but which, while quite unknown in New Zealand, strangely enough

reappears again in Lord Howe's Island, far to the north-west, in the Tasman Sea. In Norfolk Island there lived down to recent times a species of *Nestor*, related to the kea, and of *Notornis*, a genus now confined to New Zealand. On the other hand, in the Antipodes, the Auckland, the Macquarrie and the Campbell Islands, far to the south, there live birds such as the New Zealand woodhen, and a parrot very nearly related to the crimson-headed parakeet (*Cyanorhamphus*) common both to the mainland and to the Chatham Islands, as well as many plants common to one or more of these southern islands, and to New Zealand or the Chatham Islands, proclaiming that these island specks are but the fragments protruding above the surface of the sea, of a continent or continental island now broken up, and all but totally covered. It seems pretty certain, therefore, as Mr. Wallace has indicated, that "the Bampton shoal west of New Caledonia, and Lord Howe's Island further south," and, perhaps, also New Caledonia and Fiji, formed the northern and western limits of this former extensive continental island—which I have called *Antipodea*, which almost certainly also extended east to the Chatham Islands, and most probably south and east to the Macquarrie and the Antipodes Islands. Mr. Hedley, of Sydney, has, in a recent paper which he has been kind enough to send me, confirmed this in his very interesting account of the distribution of *Placostylus*, a genus of land Mollusca. Its distribution defines very sharply a province comprising the Solomon Islands, Fiji, the New Hebrides, the Loyalty Islands, New Caledonia, Norfolk Island, Lord Howe's Island, and New Zealand. The genus is absent from Australia, and Mr. Hedley believes that it was never connected with the Placostylus province. New Zealand and New Caledonia he thinks were early separated from the Northern Archipelagos.

Now turning for a little to another quarter of the globe, to the region of the Mascarene Islands, we find that François Leguat, the French Huguenot emigrant from Europe to South Africa, who lived in several of these islands, and recorded with great exactness and veracity all that he suffered and all that he saw, has given us a long account in his 'Voyage' —republished recently by the Hakluyt Society—of the birds he saw in Rodriguez. He specially describes the solitaire, a great flightless pigeon, "very hard to catch in the Woods, but easie in open Places, because we run faster than they," and also a woodhen, or *gelinote*, with a red beak and red borders to its eyes. "They cannot fly, their fat makes 'em too heavy for it. If you offer them anything that's red, they are so angry they will fly at you to catch it out of your hand, and in the heat of the combat we had an opportunity to take them with ease." Remains of this bird have been discovered along with those of the solitaire, and have been determined to belong to a great species of crake, nearly related to the woodhens of New Zealand. From its hostility to red the generic name of *Erythromachus* has been applied to it.

The Island of Mauritius, 95 miles to the south-west, was inhabited by the great dodo (*Didus ineptus*), which was also a gigantic flightless pigeon, living on the ground. It was a very near relative of the solitaire, as was finally proved by an examination of the large collection of its bones received in Europe in 1866. Leguat in his account of Mauritius speaks of a large gelinote somewhat resembling the bird he had seen in Rodriguez. As no remains which could be referred to this bird were for nearly two hundred years brought to light, Leguat's account was long discredited. Among the dodo bones, however, collected in 1866 there were several of another bird which was then and continued to be unknown, till the year 1868, when Herr von Frauenfeld discovered in the parchment library of the Emperor of Austria the picture of a remarkable bird, a tall crake or woodhen, so closely agreeing with the gelinote described by Leguat as to leave no doubt as to its identity. This painting had been made by a Dutchman who had seen the bird alive either in Mauritius, or in Europe—perhaps in the royal menagerie in Amsterdam. The bones found mixed with those of the dodo turned out unquestionably to belong to this fine woodhen, which received the name of *Aphanapteryx*. Both birds, however, the one from Rodriguez and the other from Mauritius, were of the closest kin to each other, and must have had a common ancestor; but their nearest relatives elsewhere are the wekas, or woodhens, of New Zealand, which are also flightless, and possess that singular characteristic of the *Erythromachus*, "if you offer them anything that is red . . . . they will fly at you to catch it out of your hand," for the New Zealand woodhens are easily caught, through their bold inquisitiveness, by anyone camping in the bush, by a red rag at the end of a stick, as they come prowling round his tent. At the present day there are no birds in either Rodriguez or Mauritius nearly related to the Ocydromine group of the rails. "The zoological population, so rich and varied, of the Islands of Mauritius, Reunion, and Rodriguez, including wingless birds," says Prof. Milne-Edwards, "gigantic tortoises, saurians, and other terrestrial animals, does not seem as if it could have been born on lands of so restricted an extent." Professor Newton also and his brother, Sir Edward, consider it "impossible on any other reasonable supposition than that of a common ancestry to account for the distribution of the animal forms that they present. These authors are compelled to the belief that there was once a time when Rodriguez, Mauritius, Bourbon, Madagascar, and the Seychelles were connected by dry land, and that that time is sufficiently remote to have permitted the descendants of the original inhabitants of this now submerged continent, named *Lemuria* by Dr Sclater, to become modified into the many representative forms which are now known. . . . That the solitaire of Rodriguez and the dodo of Mauritius, much as they eventually came to differ, sprang from one and

the same stock, seems a deduction so obvious that the authors can no more conceive any one fully acquainted with the facts of the case hesitating about its adoption" ('Voyage of François Leguat,' ii. p. 356 —Hakluyt Soc. 1891.)

On comparing the bones of the *Aphanapteryx* brought from the Chatham Islands with those of the bird from Mauritius, I have found them to be so closely related as to be specifically almost inseparable. Indeed, these bones from Wharekauri and Mauritius, over 120° of longitude apart, are more nearly related to each other than the *Erythromachus* of Rodriguez (an island of its own archipelago, only 95 miles distant) is with the *Aphanapteryx* of Mauritius. The *Aphanapteryx*, as I have already stated, belongs to the Ocydromine or Weka group of rails, exclusively confined to the Southern Hemisphere, and so far as is known, to the island continents I have just described in the New Zealand and the Mascarene regions. They were heavy birds incapable of flight, and unable to swim or to fly from the one region to the other.

The question at once arises how came these birds to inhabit such widely separated regions? There is only one deduction, the members of the genus must have reached their respective homes by some continuous land connection between the two places. In order, however, to make as clear as possible the route by which I believe these descendants of a common ancestor reached habitats so far apart, I shall ask your attention to some points of distribution in some other regions of the same hemisphere.

In the southern portions of the great continents, in the southern part of South America, in South Africa, in Australia, and in New Zealand, we have forms, either still living or now extinct, so closely related to each other as to indicate that they have sprung from a common ancestor. In New Zealand there occur the remains of that extraordinary bird, the moa, which stood over 10 feet in height, a member of the ancient family of the ostriches. It lived down to comparatively recent times and goes back to about the Pleistocene or to the newer Pliocene age. We have also here a somewhat aberrant form of the same family, the kiwi, or apteryx, still living. In Australia there existed a now extinct genus of the dinornithine ostriches, the *Dromornis;* and two genera alive, the emu and the cassowary—the latter extending into Australia from its home in New Guinea and its surrounding islands. In Madagascar we find in a fossil state the bones of a large species of the same group, the *Æpyornis*, specimens of whose bones recently received in the British Museum I have closely examined, whose similarity to those of the moa is so great that if they had been discovered in New Zealand they would, I believe, undoubtedly have been referred to a species of *Dinornis*. In Africa we have the ostrich itself—an aberrant form. While in South America, where the rheas occur, there has lately been discovered in the Lower Tertiary strata of Patagonia the remains

of great flightless birds—the *Brontornis*—belonging to the *Struthionidæ*. This family (all the members of which are flightless though probably descended from very early ancestors that could fly) is, therefore, practically confined to the Southern Hemisphere. Again, the beautiful family of the Trogons is confined almost entirely to regions south of the equator; they are found in South America, Tropical and South Africa, and in the Indian Region. The penguins (*Spheniscidæ*) form a group still more rigidly restricted to southern latitudes. Two ancient forms, *Palæeudyptes* and *Palæospheniscus*, are known in the early Tertiary strata of New Zealand and of Patagonia. They now range from South America, South Africa, Australia, and New Zealand, to the Antarctic Islands, but are unknown north of the Equator. To the south of South America, to the Falkland, the Crozet, and the Kerguelen Islands, the family of the *Chionidæ*, a peculiar group of white birds related to the plovers, is also restricted. The great group of the parrots (*Psittacomorphæ*) have, as pointed out by Professor Huxley long ago, related but very distinct families in Australasia and in South America; they are feebly represented in India and South Africa, and have only a straggler here and there in North America. They are essentially a southern, or as he has termed it, *Notogæan* group (in contradistinction to *Arctogæan* applied by him to Northern Hemisphere forms). They have also been found fossil in the Miocene of France.

In the Mascarene Islands we have the dodo and the solitaire, immense ground pigeons, whose nearest relative is the little dodo (the *Didunculus*), of Samoa. In the same islands, as I have already pointed out, we have representatives (*Aphanapteryx* and *Erythromachus*), of the woodhens, which are known only from New Zealand, the Chatham, and surrounding islands.

Turning to another section of the animal kingdom, we find wonderfully developed in Australia, and in New Guinea, and some of the neighbouring islands, the marsupials, or kangaroos and wombats, a group occurring nowhere else except in South America; but the marsupials living now in Australia are not very nearly allied to those in South America. In the Pliocene age, however, there lived in East Australia *Thylacinus* and gigantic forms of the family, the *Diprotodon*, the *Nototherium*, the marsupial lion (*Thylacoleo*), and others; and quite recently remains of genera (*Prothalacinus*, *Amphiproviverra*), closely related to the Tasmanian Devil (*Thylacinus*), and to other *Dasyuridæ* (native "cats") of both Tasmania and Australia, have been discovered in the older Tertiaries—the Eocene—of Patagonia.

Another very extraordinary group (the Edentata), the ant-eaters, sloths, and armadillos, now lives in the southern parts of South America. In more ancient times the order was represented by still more bizarre forms, such as the *Glyptodon*, the *Mylodon*, and the *Megatherium*. In South Africa are the Aard-varks (*Orycteropidæ*), while in India, and

some of the Indian Islands, we find Pangolins, or ant-eaters (*Manidæ*), which are all members of the same order. They are scarcely known in the Northern Hemisphere, and then only in its warmest regions; but they have been recently found fossil in Upper Miocene beds in Samos by Dr. Forsyth-Major.

Of Amphibia, confined to Notogæa, or the Southern Hemisphere, we have the well-known examples of the *Cystognathidæ*, found in Australia, Tasmania, and South America.

Of fresh-water fishes, we have the southern salmon (*Haplochitondæ*), and the southern pikes (*Galaxiidæ*), families both unknown north of the Equator, occurring in New Zealand, Chili, Patagonia, and the Falkland Islands. Dr. Günther points out that the similarity of the African fresh-water fish fauna to that of Australia is limited to two regions, possessing Dipnoon and Osteoglossid types, while with that of South America it is striking, "yet with many points of close resemblance, the African and South American genera are distinct, which shows that the separation of the continents must have been of an old date."

Among lower orders we find *Peripatus* in South Africa, in Australia, and in South America and the West Indies; while a genus of scorpions, as Mr. Pocock has kindly pointed out to me, *Cercophonius*, is unknown except from South-east Australia and South America.

If we turn to plants, and taking only groups that are confined—or nearly so—to the Southern Hemisphere, we find among the *Saxifrageæ*, a genus *Donnatia*, distributed only in New Zealand, Tasmania, Chili, and Fuegia; while two of its tribes (*Escallonieæ*, consisting of seventeen genera, and *Cunonieæ*, with eighteen genera), are confined (almost) to New Caledonia, Australia, Tasmania, New Zealand, the Mascarene Islands, South Africa, and South America. Of these thirty-five genera only two cross the equator into the Northern Hemisphere. Of the *Proteaceæ*, or family containing the *Banksias*, which is composed of forty-nine genera and nine hundred and fifty species, only twenty-five species cross to the north side of the Equator, otherwise they are distributed to all the southern continents with Madagascar, Tasmania, New Zealand, and New Caledonia. Some members of the family occur in Miocene and Cretaceous strata in Europe. The *Monimiaceæ*, a family nearly related to the laurels, with twenty-two genera and a hundred and fifty species, are found to have the same distribution, and one of the genera, *Laurelia*, is common to Chili and New Zealand. The genus *Cryptocarya*, of the *Perseaceæ*, is common to New Zealand, South Africa, and South America. Of the cypress sub-family of the *Coniferæ*, the genus *Callitris* is found in Africa, Madagascar, and Australia; and *Fitzroya*, in Chili and Tasmania. Of the three genera of the *Podocarpeæ*, one genus is found in Tasmania, one in Chili and South America, and one common to South Africa, Australasia, and New Zealand, which also runs north to the highlands of Tropical Asia and on to Japan. *Todea*

barbara occurs at the Cape of Good Hope and [in Australia; *Lomaria alpina* at the Cape, Australia, and South America; *Fuchsia* and *Passiflora* in New Zealand and South America.

How can this distribution of so many groups common to such widely separated regions be explained? Much has been written on this subject pre-eminently by Dr. Sclater, Dr. Wallace, Sir Joseph Hooker, Professor Huxley, and Dr. Blanford. These great authorities do not all agree in the explanations they offer.

Mr. A. R. Wallace in his 'Island Life' considers that: "The three most important south temperate land-areas, south temperate America, South Africa, and Australia, have in all probability always been as widely separated from each other as now. The resemblance (between the vegetation of South Africa, and that of Australia, New Zealand, and temperate South America), has been supposed to imply some former land connection of all the great southern lands, but it appears to me that any such supposition is wholly unnecessary. . . ." As he explains the presence of marsupials in Australia and America by the preservation in these localities of remnants of once wide-spread types, so he considers the genera of plants common to Australia and South Africa as remnants of an ancient vegetation, once spread over the Northern Hemisphere, whose lands are practically continuous, driven southward along these continents by the pressure of more specialised types, and now finding a refuge in these widely separated southern lands. "And so far as the peculiar birds of New Zealand are concerned we have nothing whatever to do," he continues, "with any possible connection by way of a southern continent, or Antarctic Islands with South America and South Africa, because the nearest allies of its moas and kiwis are the cassowaries and emus, not with the ostriches and rheas, and we have distinct indications of a former land extension towards North Australia and New Guinea, which is exactly what we require for the original entrance of the struthious type into the New Zealand area" ('Island Life,' p. 525, *et seqq.*).

Mr. Darwin, on the other hand, in the 'Origin of Species' (ii. p. 190, 1888), says: "New Zealand is plainly related to South America, which though the next nearest continent is so enormously remote that the fact becomes an anomaly. This difficulty disappears in the view that New Zealand, South America, and the other southern lands have been stocked in part from the Antarctic Islands, when they were clothed with vegetation during a warmer tertiary period before the commencement of the last glacial epoch."

Dr. Blanford, in his address to the Geological Society of London in 1890, after treating the subject very fully, concludes that "the biological evidence of a former land connection between South America and Africa" is very strong, and that "if the difficulty about the depth

of the intervening ocean is overcome, there is no improbability in the suggestion that at some period of geological history an important continent having connections with South America, South Africa, and New Zealand may have occupied the Antarctic Area. . . . That some families of living animals may have originated in the southern hemisphere is shown by such examples as the *Amphisbænidæ* . . . . and especially by the *Galaxiidæ* and *Haplochitonidæ*"—the southern pikes and salmons referred to above.

In considering the number of genera, or species of the same groups that have reached the three terminal regions of the land in the Southern Hemisphere, it seems almost too remarkable to believe that it should have been the same forms in all three that have alone been able to survive the vicissitudes of retreat against "the pressure of more specialised types" through such different lands from the north to the south, without leaving often a single representative north of the equator, and yet should have successfully resisted being driven right into the southern sea. It has hitherto also been held almost an axiom of Biology that two identical species have never independently arisen in distant localities.

In attempting to account for the probable origin of the flora and fauna of New Zealand, when living there, I arrived at the conviction that to explain all the forms of life common to such remote regions demands a great southern land, not a number of separate islands.

The light which is every year being thrown on this most difficult question by new discoveries and the closer investigation of the subject, tend to lessen its difficulties. Most of the facts that I have adduced above are well known—except those from the Chatham Islands—and have been discussed by many of these able naturalists, and to the results of their investigations I shall now allude.

Professor Huxley, in discussing in 1868 (P. Z. S., p. 294) the distribution of the gallinaceous birds, points out that they are divisible into two sections, of which the families of one (*Alecteropodes*) are practically confined to the Northern Hemisphere, and the families of the other (*Peristeropodes*, with the hind toe touching the ground) are equally restricted to the Southern. This Southern Hemisphere section is composed of two great families—one in South America and one in Australasia—*i.e.*, the curassows in the former, and the megapodes or mound-builders in the latter; Africa has no representative of this section. Now, the curassows of South America and the mound-builders of Australasia are so closely related, that they must have sprung from a common stock. As none of these families are represented in the Northern Hemisphere (and the section, the *Peristeropodes*, to which they belong, passes but a little way over the equator), it seems to me there is left but one inference, that their common ancestors must have developed on some large area in the Southern Hemisphere, from which

there was access both to South America and Australasia but not to Africa.

The distribution of the parrots points in the same direction; they are almost confined, as Professor Huxley has shown, to the Southern Hemisphere, and are divided into families occupying chiefly Australasia and South America, feebly represented in India and South Africa, a few stragglers finding their way into North America. The Psittacomorphous families in the east are widely different from those in the west, yet their common ancestry is proved by many links—such as the relationship between the nestors of New Zealand and the macaws of South America, for which there appears to me no explanation, unless we suppose some extensive southern land connected with all these regions, on which their common ancestors multiplied, became modified and eventually spread outwards towards the Equator.

Evidence, perhaps still more remarkable, comes from the studies of our most penetrating embryologist, the late Professor W. K. Parker, the foremost of the interpreters of those passing structures in the embryo, which appearing but for an hour, and vanishing as if they had never been, yet so surely proclaim its pedigree and inheritances. In his paper on the skull of the Ægithognathous birds, he says, "The crows have always been to me divided into those of *Arctogæa* and *Notogæa*. Moreover, the terrestrial habits and earth-born physiognomy of several of the larger and middle-sized southern Passeres have attracted my attention . . . . for I strongly suspected that these have had a much more direct and immediate struthious parentage than . . . . the songsters and crows of our own hemisphere. This rooted belief has grown into something like certainty to me. . . . In the south we find the most struthious types, and in the north the highest. . . . The taxonomic value of the facial characters lie somewhat deeper" than the mere external characters. ". . . The lyre-bird" of Australia is one of the "lowest forms of the *true* but rough-voiced *Coracomorphæ*, all of them belonging to *Notogæa*. . . . Supposing it to have had an ancestry amongst the extinct *Turnicomorphæ*, they must have been far less passerine, and much more related to" South American Tinamous than the modern forms.

The Australian wood-swallow (*Artamus leucorhinus*) oscillates between a Bornean *Pitta* and the American *Grallaria*. *Homorus* (*unicolor*) of the Neotropical family of the American-creepers (*Dendrocolaptidæ*), underlies the piping crow (*Gymnorhina*) of Australia, just as the *Grallaria* underlies the wood-swallow. The palate of the ripe chick of a piping-crow superimposed on that of *Homorus*, "shall, for lack of difference, be indistinguishable" from it. This bird, with its own peculiarities, and an evident tendency towards the southern crow-type, is related very intimately to the members of the American creepers. "*Gymnorhina* [or Australian piping-crow] is merely a more highly specialised, more completely metamorphosed *Dendrocolaptine* bird. It is the culmination

of a very different branch from that of the Northern Hemisphere crows. There are not many internodes between them and the Chilian and Brazilian birds." "The peculiar styliform transpalatines are found, as far as I have seen, only south of and upon the Equator, and their very curious character, always correlated with other differences, might justify one in dividing the *Coracomorphæ* (or crow-like birds) into those of the Southern Hemisphere (*Notogæa*) and those of the Northern (*Arctogæa*). The piping-crow is a Southern Hemisphere form, "an ascent from the short-billed American-creepers of the western regions of Notogæa."

Petroica bicolor, an Australian warbler, has affinity not with the wrens and warblers of the Northern Hemisphere, but in its palate at least it approaches the wood-warblers of America, or *Mniotiltidæ*, which are confined to the Panama district of America, and of which one genus reaches to Chili, and several to Brazil. Professor Parker expresses in the same paper (in the *Trans. Zool. Soc.*, Vol. X., p. 251 *et seq.*), from which I have taken the following facts and quotations, his belief that in South America we have representatives of the Miocene birds of our own geographical area.

These birds are now so differentiated from each other as to be classified in distinct families, yet to the trained eye watching their structure in the embryo, and following their history up from the distant past, before "Nature," to use Professor Parker's own poetic expression, "with her cementing 'osteoblasts,' had obliterated the once distinct and shapely stones of which each was gradually built," their common ancestry is evident. It is difficult not to infer from these facts that the stock from which those different groups sprang had its development on an extensive land which was evidently *not* in the Northern Hemisphere. This evidence, in my estimation, is of the weightiest kind towards the support of the hypothesis that there existed a large land extension, which I may name Antarctica, round the South Pole joining South America and Australia, and approaching to, or intermittently only connected with, South Africa, possessing a genial climate, on which, amid a luxuriant forest, the progenitors of these groups common to Australia and South America, which have now lost their nearest relations, could multiply, became modified, and eventually migrated northward on the advent of colder epochs, or on account of the subsidence of the land.

Before considering how far the presence of such an Austral continent will explain the distribution, I shall refer to the climate of the Southern Hemisphere during the later geological periods. In South Africa, in South America, in Australia, and in New Zealand, there are evidences of extensive glaciation, dating from so comparatively recent an epoch that the rock striations and the moraines are still unobliterated by denudation. In South Africa this glaciation occurs between 27° and 30° south latitude, and Mr. Wallace in referring

to it, says, "We may well believe that it was mainly due to the same high eccentricity, *i.e.*, in the Pleistocene, that led to the glaciation of Western and Central Europe, and Eastern North America, for the appearances are too recent to be accounted for by a greater elevation of the mountains which have since been denudated to their present level, for then also the glacial striæ and moraines would have disappeared also." Elsewhere Mr. Wallace speaks of the concurrent accumulation of ice in both hemispheres. Mr. Darwin also speaks, as I have quoted above, of the Antarctic Islands being clothed with vegetation "during a warmer tertiary period before the commencement of the last glacial epoch," when the northern regions of the Globe were also warm, or even sub-tropical. Sir Robert Ball, however, who has made an important addition to Dr. Croll's well-known explanation of the cause of the Ice Age, by establishing, mathematically, the different percentages of heat that are received in the summer and in the winter of each hemisphere, says emphatically, "It is an essential doctrine of the astronomical theory of the Ice Age that the respective glaciations of the two hemispheres were *not* simultaneous." They were alternate. When it was a glacial age in the Northern Hemisphere, it was a genial age in the Southern, and *vice versâ*, and "clusters of genial and ice ages" may have followed each other before each period of high eccentricity which originated them passed away. "If it could be shown that the ice ages in the two hemispheres were concurrent, the astronomical doctrine would have to be forthwith abandoned." This glacial age, of which evidences have been found in the southern continents, must, if Sir Robert Ball's assertion be correct, have taken place during a genial period in the Northern Hemisphere. Now during the Miocene Age there was such a warm period, doubtless due to a period of high eccentricity, when a luxuriant flora flourished in the Arctic regions to within 8¼° of the Pole. Ihering has recenly stated in *Das Ausland*, that the Pampas formation in the Argentine Republic is an inter-glacial loess of Pliocene Age. The evidences of glaciation in Africa extend as far north as from 27° to 36°, and in Australia to 36° south latitude. It is evident, therefore, that if a large land area existed in the Antarctic Ocean in Miocene times, both its fauna and its flora would be driven north beyond these latitudes and perhaps even over the Equator, a journey in which many forms probably would perish, and its surface would require to be re-stocked on the passing away of the cold period. The distribution of the *Sirenia*, as Dr. H. Woodward, F.R.S., has shown (*Geol. Mag.*, 1885, p. 423), goes to prove a *vis a tergo* in southern latitudes, driving tropical forms to the north. "Assuming, as I think we may," he says, "that the *Sirenia* at the present day *belong exclusively to the tropical regions of the Earth*, and that *Rhytina* in its boreal home was simply a surviving relic from the past . . . we must conclude that the presence of twelve genera and twenty-seven species

of fossil *Sirenia* as widely distributed then as the recent forms are at the present day, but with a range from the tropic of cancer up to 60° of N. latitude, affords a most valuable piece of evidence attesting the former extension of subtropical conditions of climate which must have prevailed over Europe, Asia, and North America in Eocene and Miocene times."

The glaciation, so far as we have evidence, seems to have extended farther north, and to have been more severe in Africa than in the Australasian lands; and if, as some New Zealand geologists believe, there was only a glacier, not a glaciated age in New Zealand and East Australia, the milder climate there may have been due to the narrow enclosed sea between and terminating not far to the south of them, being open to the warm northern seas. The fugitives might have therefore been driven less far north in the two Australasian Islands, of East Australia and New Zealand; and when, in the late Miocene and in the Pliocene, the warm period (corresponding to the growing cold period of the Northern Hemisphere) was advancing, and the land surface fit for peopling was increasing, there would be a slow return of life to the Antarctic land. Whether or not there was such a glacial period, there must have occurred in southern latitudes a very mild age during the height of the Glacial Age of the Northern Hemisphere, during which the fauna and flora (of which *Pringlea* of Kerguelen and Fuegia is a remnant), now common to the terminal areas of the three great continents, could have developed and intermingled.

Which region chiefly acted as feeder, when the time came, on the passing away of the Southern Cold Age for the return from northern latitudes of the Austral fauna and flora, depended on the distribution of land and water during the period of their northern trek, and on whether the climate had been equally severe between all meridians. At all events, from the best-stocked and most accessible of the lands to its north would the Antarctic Continent receive back the progenitors of the fauna and flora now common to the southern terminations of the great continents when driven south during the on-coming and duration of the great northern Glacial Epoch. There would then have been in the Southern Hemisphere a correspondingly or, perhaps, even more genial climate, if, as has been supposed, the Gulf Stream was then deflected south across what is now the Isthmus of Panama, and the shores of the Austral Continent were open to the warm water of the Tropics. On this land, therefore, would be developed those Notogæan forms of which we have no representatives now, if ever they existed, in Arctogæa.

The presence of the *Aphanapteryx* and other Ocydromine birds both in the Mascarene and in the New Zealand continental Islands supports other evidence already accumulated, pointing to an extension of that area south by Marion and Kerguelen Islands, and of New Zealand south, or

the Antarctic land north, by way of the Macquarrie, Auckland, and Antipodes Islands.

The islands to the south-east of New Zealand—the Auckland, the Macquarrie, and the Campbell Islands—lie within a radius of some 600 miles; and both their fauna and flora indicate a close relationship with New Zealand. Some of their number—the Antipodes, the Bounty, and the Campbell Islands—are entirely composed of igneous rocks, and are probably the summits of former volcanic heights of the Austral continent. The evidence, as a whole, goes to support the view that they were all probably part of one large continent. In the Chatham and in many of the other Islands, extensive areas are covered with bogs and peat mosses; and both there, and in the Auckland Islands there occur beds of bitumenous peat. Kerguelen Island is likewise covered with peat bogs, and has large lakes and pools in the hills, where "measurements of the map afford no very trustworthy basis for estimates of the time needed for a journey of given length in a certain direction." Its geological structure is volcanic; but it contains coal, or lignite beds. Its flora indicates that it is the "remains of a much larger land area, which, though peopled with plants mainly from the southern extreme of South America, 4000 miles to the westward, possessed an endemic flora of its own, which included forest trees of considerable dimensions." Mr. H. Travers observes, in his account of the Chatham Islands, that large trees are visible in the holes which the underground fires have excavated there, "greater than any seen on the island." The prevalent features of the vegetation of Kerguelen are Fuegian. Of the flowering plants that are not peculiar to the island, *Cotula plumosa* is found elsewhere only in the Auckland and Campbell Islands, south of New Zealand; *Ranunculus trullifolius* is Fuegian; *R. moseleyi* is closely allied to a Fuegian species, and *Uncinia compacta* is a native of the mountains of New Zealand and Tasmania, and it is nearly allied to a Fuegian species. The supposed endemic Kerguelen genus *Lyallia* has now been discovered in Fuegia. It contains six species common to America, New Zealand, and the islands south of it, three of them being European. The American affinity established by flowering plants is shown by cryptogams, amongst which, however, the only evidence of migration from South Africa occurs, *i.e.*, *Polypodium vulgare*, known in the southern temperate zone only, from Cape Colony, Marion, and Kerguelen Islands. "Various phenomena . . . . common to the three archipelagos—Kerguelen, Crozets, and Marion—favour the supposition of these all having been peopled with land plants from South America; . . . . [that] these islands constitute the wrecks of either an ancient continent or an archipelago which formerly extended further westwards, and that the present vegetation consists of the waifs and strays of a mainly Fuegian flora, together with a few survivals of an endemic one. The Falkland Islands and South Georgia indicate a botanical identity

with Fuegia. Marion Island, 1650 miles, and the Crozets 1200, west of Kerguelen, contain several Fuegian species not yet found in Kerguelen. Marion has two ferns (an *Asplenium* and an *Aspidium*) in common with the Cape, and it also contains the genus *Pringlea*, common to Kerguelen, "pointing to an ancient land connection between those islands, for its seeds are perishable, and not likely to be conveyed by birds. The distinctness of the genus also points to a former wide extension of land, on which its progenitors became developed. The existence of fossil tree-trunks in the Crozets and Kerguelen Islands points to similar conditions."

Amsterdam and St. Paul's Islands, separated by one degree of latitude, approximate in their flora to South Africa. One fern only is common to Kerguelen (*Lomaria alpina*), one is peculiar (*Nephrodeum antarcticum*), but allied to a Mauritian species, and two others are natives of the Cape; but neither *Polypodium vulgare* nor *Asplenium mohrioides* have been found in either island, though the former is common to the Cape, Marion, and Kerguelen, and the latter to the two first of these localities. The flora of Tristan d'Acunha is Fuegian, with an admixture of Cape genera, but without the characteristics of Kerguelen Island. It contains also some Amsterdam Island genera, and Fuegian and Falkland Island plants, not found in the islands south and east of them, are more numerous than its Cape genera, and it contains also the strictly American genus *Chevreulia*.

The above evidence from the southern islands, for which I am indebted to Professor Moseley's and Mr. Hemsley's writings, therefore, also points in the direction of a more extensive land in the Antarctic Seas, and it is supported by the giant tree-like sea-weeds growing on many of the Antarctic Islands.

To sum up, this extensive land is necessitated by the occurrence of families of marine and fresh-water fishes; by the occurrence of the genus *Pringlea* in Kerguelen and in Marion Island; by the distribution of certain large groups of birds, such as the *Peristeropodes*, the *Parrots*, the *Struthious*, and *Ralline* birds, and, above all, by the deep-seated resemblances shown by Professor W. K. Parker to exist between South American and many Australian birds; and as none of them have representatives in the Northern they must have had a common ancestor in the Southern Hemisphere. This last is more far-reaching evidence than the mere occurrence of a species or genus common to two or all of these regions.

The outlines of this continent it is of course impossible to trace with anything approaching to accuracy, till we are in possession of a larger number of ocean soundings. But it is not improbable that the great meridional masses of land—or world ridges—which are probably of primeval antiquity, extended to meet northward prolongations of the Antarctic continent. There is some evidence that the direct union

of Antipodea with South Africa was not contemporaneous with, or for so prolonged a period as, its connection with the others.

If the Antarctic sea-floor were elevated to a height not exceeding 2000 fathoms the exposed land would form approximately the continent which I think the evidence adduced in this paper seems to demand; practically none of that area is now below what Dr. Mill in his valuable 'Realm of Nature' terms the line of *mean sphere level*.

The geological evidence, as pointed out by Mr. Wallace, goes to show that New Zealand was separated from Australia during all the Tertiary period, and that East and West Australia existed as two islands during a portion of the Cretaceous and Tertiary ages; so that in the early Tertiary period, at least, there were three separate islands, West Australia, East Australia, and New Zealand, the two latter with southern extensions. The Antipodean eastern shore-line of this continent extended probably from the Chatham Islands, by Young Island, to Victoria-Land, where the Pacific trough runs far to the south; and north-west from the Chatham Islands, by Norfolk Island, near to—and probably including—New Caledonia and Fiji; southwards, by Lord Howe's Island to the west of Stewart and Macquarrie Islands, where, turning south and westward, it united with the eastern shore of East Australia, prolonged south by Tasmania to the Antarctic Land. The northern extension of East Australia, probably connected the Great Papuasian Land (New Guinea, the Solomons, New Britain, and New Ireland), across Torres Straits—West Australia at this period, and for a long time previously and after, remaining a large and isolated island. The western shore of East Australia then ran southward and westward to Wilkes Land, where, about the longitude of 90° E., the trough of the Indian Ocean extends south towards the Pole. The shore line of Antarctica once more trended northward by Kemp Island, and Kerguelen Land to join the Ethiopian region, either by the Mascarene Island-continent Lemuria, mayhap with an African commissure, or, perhaps, for a time with Africa directly. The South Atlantic Ocean whose trough seems to extend far south into the Antarctic, would separate the Ethiopian prolongation from the South American Antarctic connection (which included the Falkland Islands, South Georgia, and the Sandwich Group, to Graham and Alexander Lands), and its shores would run westwards to unite with the eastern shore extending south from the Chatham Islands to Victoria Land. Our knowledge, however, of the sea floor to the south of Africa is still very imperfect.

This arrangement of land will, I think, explain the anomalies of the migrations of the flora and fauna, not less satisfactorily than that by an entirely northern route.

The monotremes and marsupials in Australia are supposed by Mr. Wallace to have come to West Australia, when isolated from East Australia, at a very ancient period from Asia, *viâ* a land connection

across the Java Sea, and to have entered East Australia only in the Tertiary Age after the union of the two islands into a conjoint Australia. Nearly all the fossil remains, however, of these groups are found in East Australia, and their present distribution is in northern and eastern Austro-Malaya and Australia. Now there have been found in Patagonia, as already stated, in early Eocene strata fossil remains, "nearly allied to the carnivorous Thylacine of Tasmania and the native cats, or Dasyures, that occur both in pliocene and pleistocene beds in Australia, or live now in Australia and Tasmania." No fossil remains of these southern forms have been found elsewhere out of Australia and Patagonia. It is not therefore at all improbable to suppose that the South American Thylacine-like forms multiplied and developed in the Southern Continent during the glacial epoch of the Northern Hemisphere—that is, a warm age of the Southern—and reached East Australia from that continent, then spread north through Tasmania into New Guinea and the Papuan Islands. Why they are not found in New Zealand is difficult to say; some temporary subsidence or other barrier may probably have prevented their reaching it. It does seem to me strange, however, if the marsupials reached Australia *viâ* the Java Sea, Timor, and the belt of the Austro-Malayan Islands to the west of it, that with the exception of a *Cuscus*, which may not improbably have been introduced, there are no marsupials in any of the South-Eastern Austro-Malayan Islands, where there are no enemies not found in New Guinea and Australia, especially in Timor, which is so Australian in its climate and vegetation. The ancestors of the present marsupials in South America, which have no near affinity with the present Australian forms, came probably enough *viâ* North America from Europe. Moreno and Mercarat have also asserted the occurrence of a large monotreme in the same strata, "which, if confirmed," to quote Mr. Lydekker, "will strongly support the connection of the South American Tertiary fauna with the existing fauna of Australia."

The ancestors of the cassowaries, the moas, and the kiwis are supposed by Mr. Wallace to have come from New Guinea into the north of East Australia, and to have spread thence to New Zealand in Cretaceous times. Again, the Eocene of Patagonia has produced the remains of giant struthious birds—*Brontornis burmeisteri*—which may have been the nearest relatives of the ancestors on the Antarctic Continent, of the Australian *Dromornis*, the New Zealand *Dinornis*, of the *Æpyornis*, and of the remaining tridactyle form of Madagascar. Remains of *Æpyornis*, recently received at the British Museum, show that its tibia, or leg bone especially, very closely resembled that of the moa—indeed, so close that if it had been found in New Zealand it would not have been suspected, I believe, to be other than that of a different species of *Dinornis*. It has no osseous bridge for the extensor tendon at the distal end of the bone; but in this respect the nearly-

related moas and apteryxes also differ from each other. The former has a strong bony bridge, while in the latter it is cartilaginous. The metatarsi and the femora of the moa and of the *Æpyornis* also show many points in common. The Madagascar, the Australian, the New Zealand, and perhaps the Patagonian ostriches would seem to have had a common ancestor. In New Zealand I discovered, and have described, moa bones, indicating a new genus, *Palæo-casuarius*, which show a wonderful resemblance to those of the cassowaries. Indeed, the moa itself is said to have been found in Australia; if this be indeed so, then probably the genus *Dinornis* entered Australia and New Zealand from the same common land. If this identification should not be confirmed, the common ancestor, in the Antarctic Continent, of both these groups may have given origin to moas and kiwis in New Zealand, and to *Dromornis* and emus in Australia, and in the far north to cassowaries. If, as Mr. Wallace believes, the ancestor of the emu, moa, and apteryx came south from New Guinea into East Australia, why did not some of the marsupials there accompany it also? And why, if the latter reached New Guinea from Australia, were they unaccompanied by the emu or the *Dromornis?* If the ancestor of *Dromornis* came into East Australia from New Guinea, it has not yet been discovered either in Australia or New Zealand, and yet from it have descended cassowaries in Papuasia, emus and *Dromornis* in Australia, moas and apteryxes in New Zealand. The moa and the apteryx are more numerous in the south than in the north island of New Zealand—there being three or four apteryxes and moas in the latter to one in the former. The crowding together of so many species of moa into New Zealand can be accounted for by their having been developed in a large land area—as in the supposed southern continent—quite as well as by supposing, as has been done by Mr. Hutton, that these species must have become isolated on different islands in order to become different species, and then when these islands became finally submerged, the various species were driven into one island. The species of *Dinornis* have been inordinately multiplied, based on differences of fractions of an inch in the length or breadth of their bones, so that in reality there are not so many species as there are specific names—I speak after having examined hundreds of bones. Nor are those that may be allowed as species at all easily distinguishable from each other, their chief differences being those of size and superficial variation in the form of the skull, and very similar to those that arise in a group of barn-door fowls, free from enemies, and with plenty of food. But even if they were all good species, they might have been developed on a large continuous area, quite as well as on isolated islands.

The total want of identity between the *species* of winged birds of New Zealand and those peculiar to Australia, which is remarked on by Mr. Wallace, may be explained by supposing both islands, East Australia and New Zealand, to have received their inhabitants mostly from a

common land, for though species common to both are rare, yet most of the *genera* occur in both, and the twenty-one genera peculiar to New Zealand are related to Australian genera. Of these genera seven only are allied to exclusively Australian genera, four are of doubtful affinity, three are peculiar and probably had their origin in New Zealand, but they belong to groups—the *Struthionidæ* and parrots—peculiar to the Southern Hemisphere. Three of the starling family have an Oriental origin; of the remaining four, two are ralline birds characteristic of the New Zealand region, having their nearest allies in the Mascarene Islands, and two belong to a family—the snipes—widely spread in the Southern Hemisphere, which may have probably become modified into species since they reached New Zealand. If the southern Ice Age were less severe in Australia and New Zealand, as some geologists think, a remnant of its former bird fauna may have remained in their northern parts; and since both Australia and New Zealand had northern extensions towards the tropics, a certain admixture of tropical forms might be expected. Of the large number of genera peculiar to Australia, and confined, more or less, to its temperate regions which are totally absent from temperate New Zealand, the same explanation may be offered: they have developed in temperate Australia since they reached that latitude, unable to return south or advance north to a region common to the two countries. In the same way the distribution of the lizards of the two countries; *Lygosoma* in New Zealand and Australia may have entered both countries from the north, as it is found in the Pacific Islands and New Caledonia. Australia with New Guinea has a peculiar family and twenty-one peculiar genera. Then the fresh-water fishes of both Australia and New Zealand are of types related to South America, which must have had an origin common to all three regions.

As regards the plant-life of New Zealand, two hundred and fifteen out of two hundred and eighty-five genera of its flowering plants are common to Australia, Polynesia, South America, the Antarctic Islands, or Europe. Only thirty-two out of three hundred and ten New Zealand genera are absolutely confined to New Zealand and Australia; one hundred and seventy-four are South American (of the remainder some are Antarctic or European, and some Polynesian). Mr. Wallace says, "A large proportion of the natural orders and genera [of the plants] of New Zealand are more common to Australia than to any other country, but the species common to both are few." This affinity of genera and diversity of species may be explained in the same way as I have done the fauna. The floras of Australia and New Zealand may not improbably have been derived from a contiguous area of Antarctica which travelled north on different extensions; and may also have derived some of their Polynesian and European forms from the north by their northern extensions; while the peculiar and less exclusively temperate

West Australian forms may have remained from those pre-tertiary times, when New Zealand had a north-westerly union with Australia, as has been so beautifully unfolded by Mr. Wallace. That the chief current of dispersion has flowed from south to north, and not *vice versâ*, has considerable support lent to it by the results of Sir William Macgregor's recent botanical collections in New Guinea and of others from Mount Kina-balu in Borneo. In the highland vegetation of the former country, along with an extensive display of heaths and whortleberries—forms of vegetation which are scanty in Australia—there is also a marked preponderance of far southern types, belonging to Australian, New Zealand, and Antarctic species. In Borneo also have been found plants common to the Papuan highlands, and also to Australia and high southern latitudes. So many plants from high southern latitudes of common origin, typical of Tasmania, of continental Australia, of the Southern Ocean, and of Patagonia, point to a land connection of portions of New Guinea with an Antarctic continent. It must be borne in mind that when the Antarctic flora began to be driven north, as the warm Antarctic Age (contemporary with a glacial age in the Northern Hemisphere) commenced to tend towards a colder era, the flora mainly followed and kept pace with the temperature—and that it was a semi-tropical, or very temperate, not an Antarctic flora—in the present sense—that travelled northwards. The presence in New Zealand of wholly temperate or Alpine species of tropical or sub-tropical genera of Australian plants, is explained by Mr. Wallace by their having "migrated across the sea" to New Zealand in the temperate zone, and finding the temperate and Alpine regions in New Zealand unoccupied by the tropical forms and their modified descendants, they were best able to establish themselves there. But I fail to follow how the Australian sub-tropical forms got so far south as to be able to cross to New Zealand, since the middle of its north island lies nearly 17° S. of the Tropic of Capricorn. If there were continuous land from across the narrow strait at Lord Howe's Island to New Zealand, to which the sub-tropical flora might have reached, it might have been driven south by a later subsidence of the land to the north, and reached all parts of what is now New Zealand; but then it would be on the same footing as that of the northern sub-tropical area of the New Zealand extension. If New Zealand had received these now tropical and sub-tropical genera from the same common southern genial clime, the different vicissitudes they have experienced may account for the species occupying different habitats in the two countries; indeed, Mr. Wallace himself suggests that these genera may have reached both countries from an Antarctic source.

In order to account for the distribution of life in New Zealand and Australia, Mr. Hutton, who says he has abandoned the hypothesis of an Antarctic continent, has supposed a great belt of land stretching north-

west across the Pacific Ocean from Chili, *viâ* the Pacific Islands and Fiji. According, however, to Professor Geikie (who says in his address to the Geographical Section of the British Association, 1892), "so abruptly does the continental plateau rise from the oceanic trough, that a depression of the sea-level, or an elevation of the plateau for 10,000 feet would add only a narrow belt to the Pacific Coast between Alaska and Cape Horn," and notwithstanding the evidences in the fiords of Chili of recent submergence, the trough of the Pacific has existed as deep sea ever since the oceanic islands of the Pacific came to the surface on "the mightiest of all the submarine buckles of the earth crust." Such a bridge, therefore, as Mr. Hutton suggests, seems very improbable on physical grounds.

It is to be observed also that the great Glacial Epoch passed away with the lessening of the eccentricity and the gradual more or less balancing of the Northern and Southern Hemisphere climatic conditions; and that there has not yet occurred a glacial age in the Southern Hemisphere in succession to the last northern one. The attainment of the present interglacial conditions has been gradual, and consequently few of the Australian or Antarctic types would be driven so far or so strenuously toward or across the Equator, as the northern types in the reverse direction by the northern Ice Age. This is, probably, the explanation why so few of the southern plants are found north of the Equator, and not because of "their less hardiness from not being developed in a colder region, or where Alpine and Arctic conditions prevailed." The northern flora, indeed, according to Mr. Wallace, was developed from Cretaceous to Pliocene times under a warm climate, and was driven south by the cold of the Pliocene and Pleistocene. The flora on the supposed Antarctic continent probably experienced also a glacial or at least a very cold period during the very warm Arctic period, when temperate plants flourished vigorously within the Arctic circle, at all events the cold conditions would not be less marked in the southern than the genial in the northern regions.

I have already mentioned the chief points of resemblance in the fauna between South America and Australia. In New Zealand and Australia we have identical and closely-allied South American freshwater fishes. "Although geographically widely separated from each other, the freshwater fishes of the three divisions (the *Tasmanian sub-region*, the *New Zealand sub-region*, and the *Fuegian sub-region*), are nevertheless so closely allied that conclusions drawn from this group of animals alone would hardly justify us in regarding these divisions as sub-regions."* And as to plants, New Zealand and temperate South America have seventy-four genera in common; of these eleven species are identical, and thirty-two others are close allies or

* Günther: 'The Study of Fishes,' p. 249.

representative species. I have already mentioned some of these, and the occurrence of so distinct a genus as *Pringlea* in Kerguelen and Marion Islands, points, as the inter-relationship between the Dendrocolaptine birds and the Gymnorhine crows does, to the necessity for an extensive land on which ancestors of these forms could have been developed.

Mr. Wallace himself has pointed out how insects, as a whole, show a decided inter-relation between Australia and South America. Indeed, he believes that the *Buprestidæ*—a family of beetles—had their original development in temperate Australia, and spread thence to temperate America, and to tropical Asia and Africa. And as to the longicorn beetles, of which there are four genera common to South America and Australia, he says there must have been some means of communication between these countries (and, I may add, with New Zealand) other than at present. As these insects are tree-borers, which live on rotting wood, the route of their inter-communication demands a wooded area—a genial Antarctic continent, not merely a series of far separated islands as stepping-stones.

The connection between South Africa and South America has been well shown by Dr. Günther, so long ago as 1880: "Here, again, there are marked cases of affinity between the fresh-water fishes. For example, two of the most natural families of fishes, the *Chromides* and the *Characinidæ*, are peculiar and (with the exception of the genus *Eutroplus*) restricted to them." Three out of the sub-families into which the latter is divided are both African and South American. This important fact proves "a very large amount of communication between the two areas, it being manifest that members of all three sub-families were transferred from one to the other continent after extensive differentiation had taken place." Yet with all these points of close resemblance, the African and South American series are generically distinct, which shows that the separation of the continents must have been of old date.* This family is unknown in a fossil state, or as an inhabitant at any time of Eurasia or North America. The snake-fauna of Madagascar is very much more American than African, proving an alliance between the two countries, as in Madagascar there has been isolated and preserved a portion of the old African fauna, kept from contact with the Palæarctic forms that overran Africa in the Pliocene and Pleistocene Ages, and ousted many of the forms that it possessed in common with South America. Among these is the family of the *Iguanidæ*, typical of South America, of which two out of three non-American genera occur in Madagascar, the other being found in Fiji, whither it probably wandered *viâ* the Antarctic continent and New Zealand. It does not concern us at present to discuss the peculiar relations of Madagascar and the Mascarene Islands with India and Africa further. Mr. Wallace

* Günther: 'Study of Fishes.' pp. 232, 233.

and Mr. Blanford have fully accounted between them for their possessing forms of life from so many regions. I have already pointed out, on the authority of so good an ornithologist as Professor Newton, that at one time Madagascar and the Mascarene and the Seychelle Islands were united together into an island continent, which may be spoken of under Dr. Sclater's name of Lemuria. In Mauritius and in Australia we have a genus of lizards, *Cryptoblepharus*, common to both. As I have already indicated, the *Æpyornis* of Madagascar is a branch off the same stock as the moa of New Zealand. A relationship between Lemuria and the New Zealand Island-Continent is strongly supported by the discovery of the *Aphanapteryx* in the Chatham Islands, which is congeneric with the *Aphanapteryx* of Mauritius. Lemuria most probably, therefore, had a separate connection with the Antarctic land.

It is not necessary to suppose that all these southernly extending arms were connected contemporaneously with an Antarctic Continent. It is impossible to account for the presence, for instance, of some South American forms in Australia and not in New Zealand; of Mascarene forms in the New Zealand region and not in Australia, or in Africa, while we are unacquainted with the orography—the rivers and mountain barriers—of the submerged southern continent, and its various commissures which may have been open at one time and closed at another. As there are, moreover, abundant evidences of great volcanic action over all the region, in New Zealand, South America, Lemuria, and the Antarctic Islands, the permutations and combinations of the ups and downs of these lands, the openings and closings of the gates, the making and obliterating of paths, or stepping-stones, are beyond our computation.

Shortly, therefore, "it is highly probable," as Mr. Blanford says, "that many forms of terrestrial life . . . . originated in the Southern Hemisphere; and . . . . it is far from improbable that the Antarctic continent was the [an] original area of development." It seems to me, more and more certain that Professor Huxley's and Professor Kitchen Parker's division of the Globe according to the distribution of life, into a northern and into a southern land—an Arctogœa and a Notogœa—will turn out to be its two fundamental biological divisions. That there was an area of development for certain groups at both poles; and that the wanderings and migrations of the fauna and flora, northwards or southwards, from age to age, and from one side of the Equator to the other, were regulated by glacial and genial periods, by the elevation and subsidence of the land, and the flux and flow of the sea over wide areas of the continental shelf.

These deductions as to an Antarctic continent, made on biological grounds, are supported by the depth of the circumpolar sea, so far as it is known. The submarine shelf of the Austral land slopes northward all round the shores of the known lands more gently than along any

other coast, and would seem to indicate that, if elevated, the land would form in great extent a continuation of the three primal ridges of the globe southward, coalesced and spread out round the Pole, with, between these arms, the terminations of the great and permanent ocean troughs. How far this new view of the form and boundaries of land in the Antarctic—founded, in great part, on the investigations and conclusions of many distinguished naturalists, geologists, and geographers—may be substantiated or refuted by future discoveries it is difficult to say; but the discovery of those interesting *Aphanapteryx* bones on the Chatham Islands must always remain an important piece of evidence bearing on the solution of this most difficult and intricate question.

Before the reading of the Paper the President made the following remarks: Mr. Forbes, to whose Paper we are about to listen, is no stranger to this Society. Going out to the East in 1878, he travelled very widely in Java, in Timor, and, in fact, through a very large portion of the islands which strew that portion of the ocean. He then returned to this country, and read a Paper before us in 1883. After that he published his 'Wanderings of a Naturalist in the Eastern Archipelago'—wanderings during which he was accompanied by his wife—herself a distinguished naturalist—whom we have the advantage of welcoming here to-night. After some stay in England he went out—I think in 1885—to New Guinea with the intention of undertaking a very considerable expedition. A series of unfortunate circumstances, over which he had no control whatever, prevented his making that expedition; but he took service under our Government in New Guinea, and attempted to do very valuable geographical work by ascending Mount Owen Stanley. His designs were frustrated, partly by various difficulties, and partly by an attack on his camp made by the natives. He then returned once more to England in 1888, and then went out in the position of head of the museum in Canterbury, New Zealand. While he occupied that position he made the researches, the benefit of which he is to give us to-night.

After the reading of the paper, the following discussion ensued:—

Mr. P. L. Sclater: As an old student of geographical distribution, a science which combines the attractions of zoology with those of geography, I have listened to Mr. Forbes's remarks with great interest, and wish to thank him much for bringing this subject before us. While, however, I quite appreciate the value of the facts he has collected in relation to the question of an old Southern Continent, I cannot quite agree with the conclusions which he seems to have arrived at. Almost the only additional piece of evidence he has brought before us on this much-debated question is that of the large and remarkable Rail, of which he found remains in the Chatham Islands. At first I believe Mr. Forbes was inclined to consider this Rail absolutely identical with the *Aphanapteryx* of Mauritius. Subsequently, if I am not mistaken, he modified this opinion so far as to refer it to a different genus;* so that he now allows that the two birds (from Chatham Island and Mauritius respectively) are not so closely allied as was at first supposed. Now the Rails and their allies are a very widely-diffused group, and much affect insular areas. I have not made any special examination of these two forms (*i.e.*, *Aphanapteryx* and *Diaphorapteryx*), but I think it quite possible that their long

* *Diaphorapteryx*. See *Bull. Brit. Orn. Cl.*, No. IV., p. xxi. (December 31st, 1892.)

bills—which seem to render them so much alike—may have been evolved from different lines of ancestors. It is, therefore, in my opinion hardly necessary to extend the former Southern Continent all the way from the Chatham Islands to the Mascarene Group in order to find a home for a set of supposed common ancestors of these two rails. We should all recollect, even in a question of geographical distribution, the excellent advice of the classical poet—

"Nec deus intersit nisi dignus vindice nodus Excidit"—

that is, we need not invent a special continent stretching half round the world in a case where it is possible to account for the facts before us without this somewhat large assumption. As regards the smaller question of the formerly greater size of New Zealand, however, I am quite agreeable to Mr. Forbes's views. There can be no question that the gigantic Moas must have required larger space than is afforded them in the present islands of New Zealand for their development. Old New Zealand, as indicated by Mr. Forbes, may probably have extended to the eastward as far as the Chatham Group, Antipodes Island, and, perhaps, the Campbell and Auckland Islands, and have formed an insular mass, perhaps equal in area to one-third of Australia, to which the name Antipodea would be appropriate. But to extend Antipodea all round the Antarctic Circle seems to me to be quite erroneous. Mr. Forbes himself admits that such an Austral continent is not necessary to explain the existence of Marsupials in South America and Australia alike. Marsupialism, we know, was the former typical form of mammal life all over the world, which has been driven out into these, its two last refuges, by the more highly-developed Placental Mammals. Exactly in the same way I am disposed to account for the existence of the Southern Pikes and Salmons (*Galaxiidæ* and *Haplochitonidæ*) in both Australia and South America. Except in a few points, the animal life of the Australian and Neotropical regions are so utterly different that I cannot believe that they have ever been joined together by a bridge of land across the Southern Pacific, as Mr. Forbes invites us to suppose. Nevertheless I am quite of opinion that our best thanks as geographers are due to Mr. Forbes for his energy in visiting the Chatham Islands, and for the interesting facts he has placed before us. They are, in fact, of such interest—so far as they relate to these islands—that a further exploration of this group is evidently advisable, and some means, I trust, may be found, on behalf of geography and biology alike, to bring it to pass.

Dr. Günther: In former years, when I had more leisure to devote to research on the geographical distribution of animals, I myself was greatly interested in cases in which the so-called disruption of continuity of the range of species was instanced. I myself found several instances which, perhaps, were of quite as great significance as this most interesting discovery of Mr. Forbes—the existence of the same type of Rail in Chatham Island, and in the Island of Mauritius. I may only remind you that in these very islands, in the Mascarene Islands, a large type of tortoise exists which is found nowhere else on the globe except in the Galapagos Islands. It is a question how the distribution of this peculiar type has come about. It was thought to be possibly in this way—that some smaller type of tortoise had reached from the South American Continent the Galapagos Islands, and, finding itself there under altered conditions, but especially that of living in an island perfectly undisturbed by any enemy, or by man, gradually developed and grew to its present extraordinary size. So, also, it might have been thought that from the African Continent some small ordinary type of tortoise reached the Mauritius and other parts of the Mascarenes, and living there for ages under the same conditions as those on the Galapagos Islands, developed into the same form, in fact, that we

had an instance of two exactly similar types, inhabiting distant regions having a different origin. Well, this seemed to be plausible, and it may be applied here in the instance of the Rails, only we have never been able to point out with any certainty the ancestor of the Galapagos Islands form, or the ancestor of the Mauritius tortoise on the African Continent, and therefore we had to abandon that theory. We then had recourse to the hypothesis of former land connections. These instances of the disruption of continuity in the distribution of the same type are rather numerous; and as we biologists got into the habit of accounting for almost every case by the disappearance of some former land connection, we have come to this—that it is necessary to assume that what now is *terra firma* must have been submerged under the sea at one time, and what is now the bed of the ocean must have been *terra firma*, and all these changes must have taken place in the period during which the principal types of our present fauna were already in existence. This you will admit is a very large order on the part of the biologists, and we must leave it entirely to the geologists and the geographers to show us to what extent we are justified in assuming such former land connections. In my further remarks I will limit myself to a most interesting portion of the fauna of New Zealand and inquire whence we may assume the component parts have been derived. I myself have, as some of you know, paid particular attention to the class of Reptilia and Freshwater fishes. These are animals which never can have traversed great stretches of ocean, or overcome terrestrial obstacles on account of their defective means of locomotion. Now when Mr. Forbes told us that in the Chatham Islands he had found the remains of the large New Zealand lizard (the *Tuatara*), this alone was, to my mind, proof sufficient that the Chatham Islands at least must have been connected in some way with New Zealand, and, as soundings show, there is nothing improbable in that. Another fact bearing upon the question that has been raised by Mr. Forbes is found in the distribution of the New Zealand freshwater fish. They consist of two families only—one analogous to our trout and grayling, the other to the pikes; but both have such distinct characteristics anatomically as well as externally that no ichthyologist has ever found any difficulty in placing them entirely by themselves. Now when you have in New Zealand two such very peculiar forms, it is extraordinary that they should be repeated on the southernmost parts of the South American Continent and the Falkland Islands. These fishes are strictly freshwater fish, and there is no evidence that they were ever able to live in salt water. Look now towards Australia, where we find these two families again, in Tasmania and South-east Australia. We cannot account for their co-existence in these three very distant parts of the Southern Hemisphere except by assuming some land connections. Yet I am unwilling to accept Mr. Forbes's theory *in toto*; but must leave it to the geographers to prove or disprove. The lizards of New Zealand are very few in number, and may have been easily introduced, as they are often nowadays; truly indigenous is a large lizard which attains a length of 2 feet (the *Tuatara*), most peculiar in its osteological and anatomical structure, and found in no other part of the world save the Chatham Islands. This form of Saurian has been very abundant in former geological ages in the Northern Hemisphere. We have been informed that the remains of forms not far removed in external appearance and osteological structure have been found in Germany and of many others in North America. Now how has that type reached New Zealand? I think it can only have been derived from the Northern Hemisphere by means of some of those oscillations of climate and the Earth's crust which Mr. Forbes described. Certainly not from a southern continent, because reptilian life and cold climate are incompatible. Thus also with regard to the single batrachian which is found in New Zealand. Australia and South America are thickly peopled

with batrachians, and several species live in Tierra del Fuego; but the nearest allies of the New Zealand frog live nowadays in Europe. This frog then can hardly have come from an Antarctic continent, but must have been derived from the Northern Hemisphere. I thought it right to place before you some facts which seem to be in favour of, as well as others which appear to militate against, Mr. Forbes's views.

Dr. Woodward: At this late hour I am rather trespassing on your forbearance. I am delighted to hear Mr. Forbes's paper. He is well aware that this Antarctic Continent is to a great extent hypothetical. At the same time his facts are incontrovertible, and if they are as capable of a favourable verification as that of the fresh-water fishes, he has made a very fair show in favour of his argument. The permanence of continental and of oceanic areas is one of those phases of geological thought which have their entrances and exits, and it is now arriving at its exit. Professor Lapworth argues strongly in favour of the non-existence of permanent ocean areas, that is, that all areas have had their periods of submergence and elevation, and whenever we find a series of islands in an area with their floras and faunas showing signs of former land connection, as has been pointed out to-night, I think we need not adopt St. Augustine's argument "that they were carried there by angels." If Mr. Forbes cannot find any stronger argument against Dr. Sclater he must adopt St. Augustine's, but I hope Dr. Sclater will not be too hard, as Mr. Forbes has made out a good case for the hypothesis of the former Antarctic land connection. I think that Professor Huxley has pointed out that the Australian aborigines had strong South African Negroid affinities. How did they arise save by some former land connection? Dr. Günther mentioned the curious isolation of the Galapagos tortoise, that would be explained by Mr. Forbes' theory, because the islands are off the American coast, and the Antarctic land would form a bridge to the Mascarene Islands and also to America. There must have been separation for a long time between the island of Madagascar and the African coast, as the ostrich has become more modified than the other struthious birds, it having only two toes. On the other hand, the Madagascar Æpyornis, from recently-obtained specimens, shows the characteristic tridactyle foot like the Dinornis of New Zealand. I must congratulate Mr. Forbes, who has, I think, made out a good case.

The President: I am sure you will desire me to return your very best thanks to Mr. Forbes and all the speakers who have addressed us. I think you will feel all the more obliged to Mr. Forbes when I tell you that he has read his paper under very distressing circumstances, as he has been suffering much the whole of this evening.

Mr. Forbes: In heartily acknowledging your kind vote of thanks, I have just one word to add as to the identification of the rail I found. When I first examined it I imagined it to be related to the Mauritius bird. On the suggestion of a distinguished naturalist I changed it to another genus, and then last week, after personally examining the type specimen, I have gone back to my original opinion.

Mr. Forbes requests that the following remarks may be appended to his paper: As the lateness of the hour prevented my replying to Dr. Sclater, I beg permission to make the following statement. With regard to Dr. Sclater's observations, I may be permitted to remark that I have distinctly disclaimed any originality in the facts I have adduced in support of my opinions, with the exception of those referring to the remains I was so fortunate as to find in Wharekauri. As to the name of the rail I discovered there, I at first identified it as belonging to the Mauritian genus; but on the suggestion of Professor Newton of Cambridge, who has the type in

keeping, and to whom I had shown the Chatham Island forms, I placed it in a new genus *Diaphorapteryx*. On personally making the comparison, after the publication of the description of this new generic title, I felt unable, with all deference to that distinguished ornithologist's opinion, to convince myself of the generic distinction of the remains from the two localities. Throughout the paper, therefore, I have spoken of the Chatham Island rail by the same generic name as is applied to the Mauritian bird. But even though some ornithologists or osteologists should consider that these Chatham Island remains ought to be assigned to a new genus on account of their somewhat larger size, the mere change of name can make no possible difference to the fact that the two forms are without the slightest question most nearly connected, so that the argument is in no way impaired. My examination and comparison of these birds has been most carefully made, not only of their bills, but on the corresponding bones of both which are known.

I quite agree with Dr. Sclater when he says it is hardly—I should have said quite un—necessary "to extend the former southern continent all the way from the Chatham Islands to the Mascarene group to find a home for a set of supposed common ancestors of these two rails." I have, as is very patent from my paper, made no such extravagant assumption. I have made this supposition to account for hundreds of forms of life, unknown in the Northern Hemisphere, that are distributed to the widely separated southern parts of the continents below the Equator. As to the marsupials of Australia and South America I have not made myself clear to Dr. Sclater. I hold that the Antarctic continent is not necessary to explain the relationship between the *present* marsupials of these two regions; but that its existence was necessary to account for the relationship between the *fossil forms* of Patagonia and of East Australia, forms unknown elsewhere. Those points in which the fauna and flora of the Australian and the Neo-tropical and other southern regions agree, are, as I have pointed out in my paper, so remarkable that an Antarctic continent would afford a clearer and an easier explanation than in the supposition that the forms common to both are the remnants of groups, once more widely distributed, which now exist at the terminations of the great continents only, and have disappeared everywhere else throughout their length. Although the extension of continent all round the Antarctic circle is pronounced to be, in Dr. Sclater's opinion, "quite erroneous," nevertheless the facts above enumerated demand an explanation more satisfactory than any hitherto offered. I quite agree with the opinions expressed by several speakers that many of the forms known in the south side of the equator are of northern origin. In my paper I have confined myself, however, to the discussion only of those which have their greatest development in the Southern Hemisphere on more than one continental termination.

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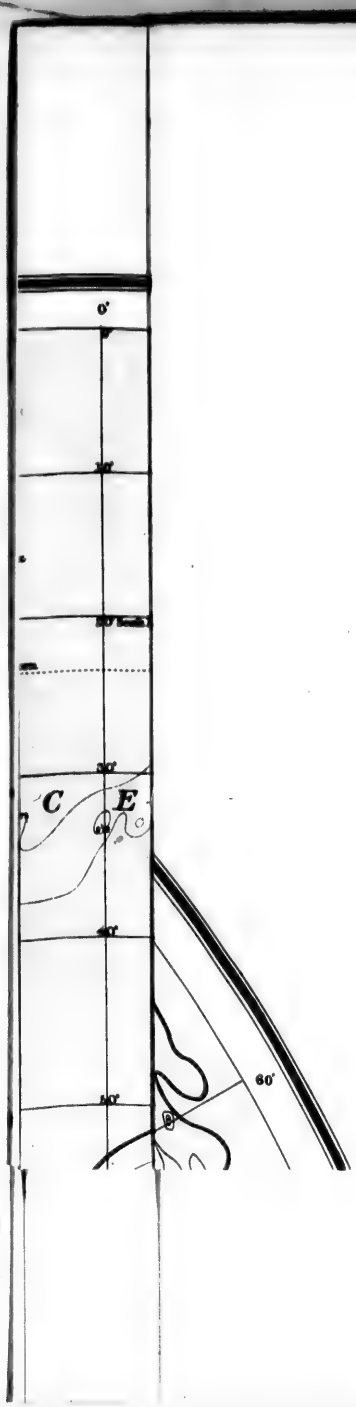
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South Orkneys
Falkland Islands
Tierra del Fuego
Cape Horn
South Shetlands
Graham Land
Alexander I. Land
Quito
SOUTH POLE
Antarctic Circle

AFRICA
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Kemp Island
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SOUTH POLE
VICTORIA LAND
Adelie Land
Balleny Is.
Cape Leeuwin
Great Australian Bight
Christmas I.
Java Sea
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Drakensberg
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Cape Town
Zambezi
Kalahari Desert
Congo
Niger
Nile
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Lake Tanganyika
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Zanzibar
Mozambique
Angola
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Kamerun
Senegal
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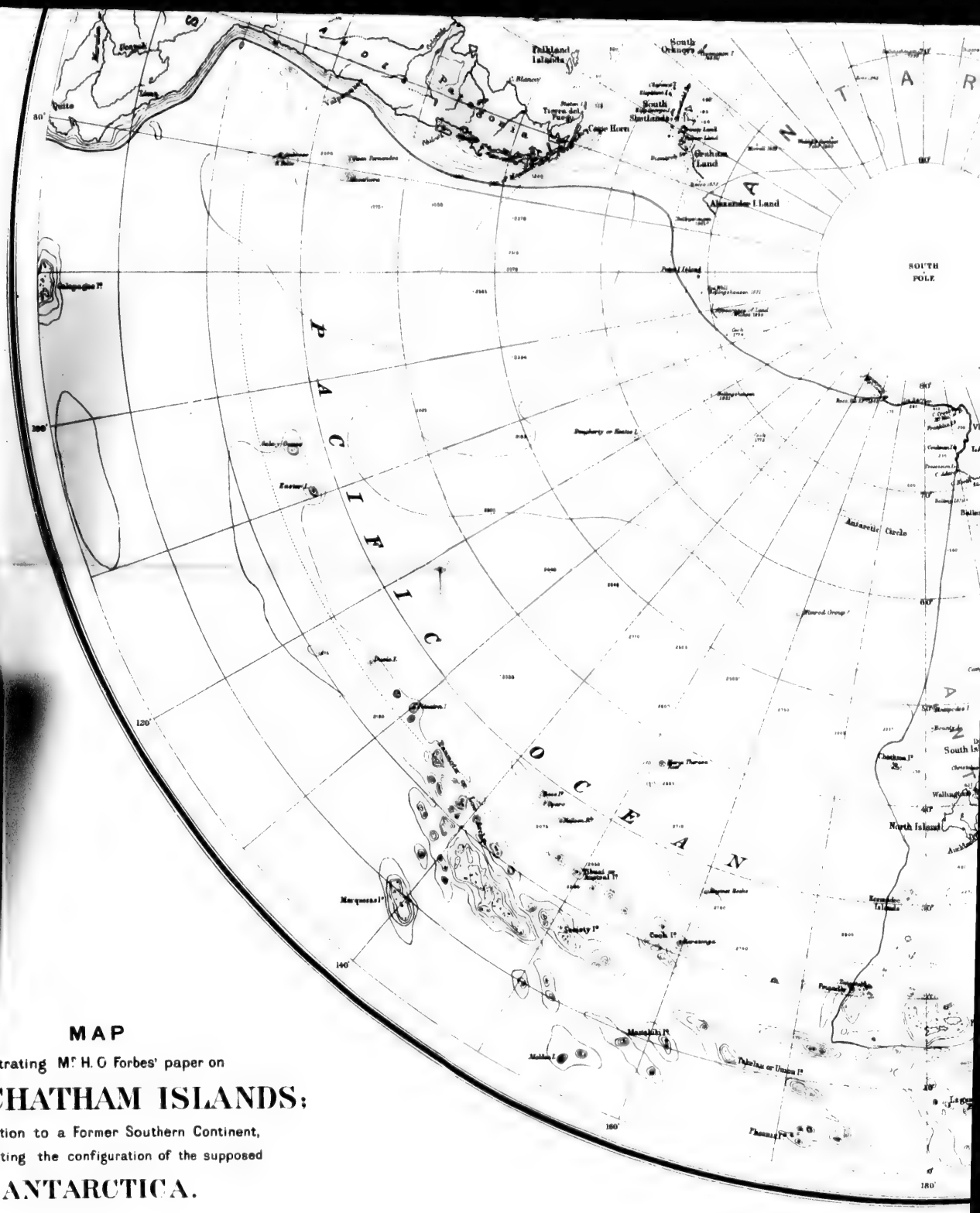


MAP

illustrating Mr H. O Forbes' paper on

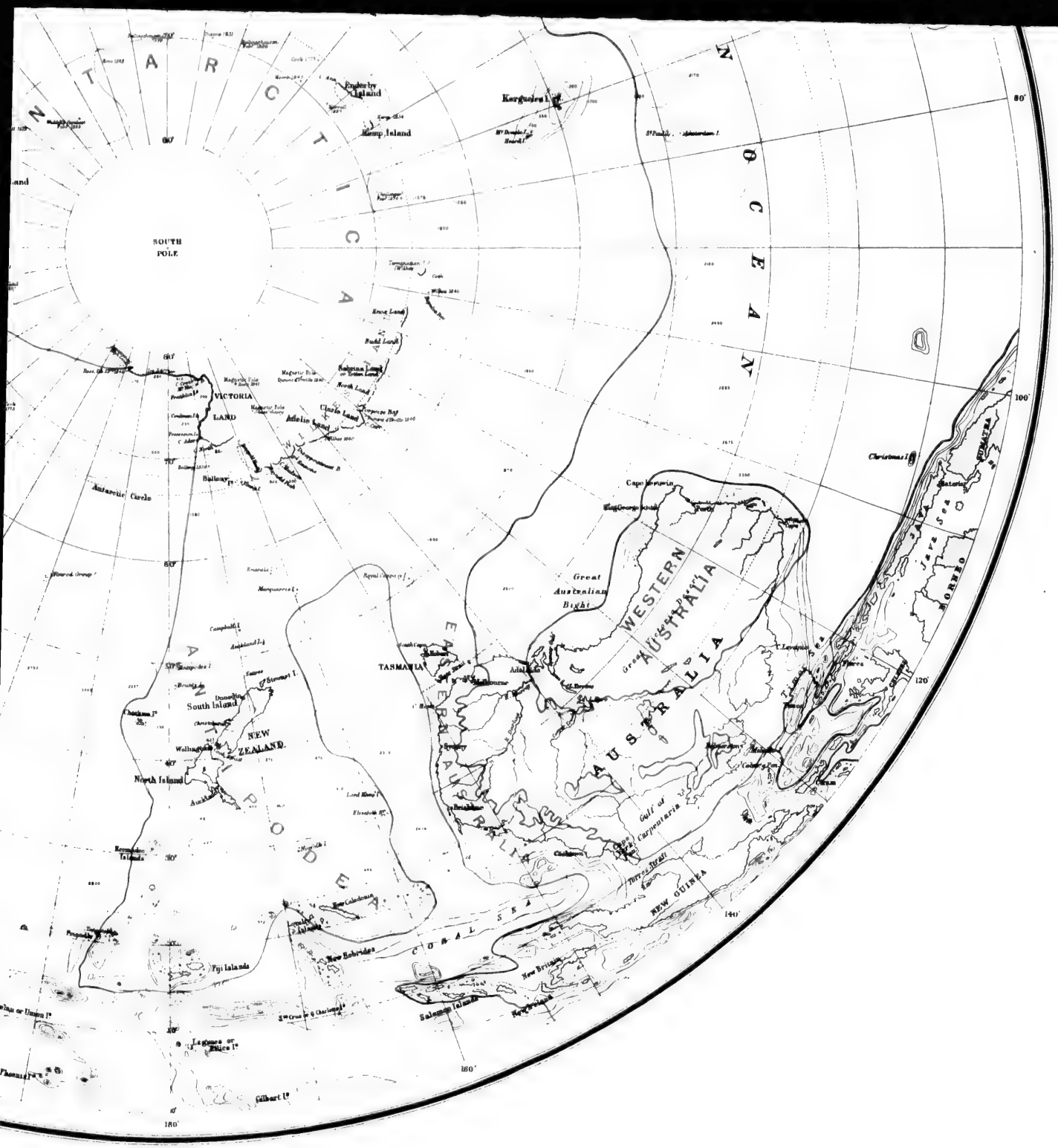
CHATHAM ISLANDS:

ir relation to a Former Southern Continent,

d indicating the configuration of the supposed

ANTARCTICA.

Published by the Royal Geogra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Auckland I.
Stewart I.
Chatham I.
South Island
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Fiji Islands
New Caledonia
Loyalty Islands
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Solomon Islands
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Cape Leeuwin
King George Sound
Port Darwin
Timor Sea
Darwin
Cooktown
Cape York
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Ceram
Amboina
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Land Rover I.
Elizabeth Bay
Gilbert I.
Phoenix Is.
Lagoon or Ellice I.
Samoa Is.
Tonga Is.
Society

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VOL. III.—PART

PART V.

MODERN AND ANCIENT ROADS

IN

EASTERN ASIA MINOR.

BY

D. G. HOGARTH AND J. A. R. MUNRO.

WITH MAPS.

PART I.—P

PART II.—T

PART III.—N

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MODERN AND ANCIENT ROADS

IN

EASTERN ASIA MINOR.

PART I.

PASSES OF THE EASTERN TAURUS AND ANTI-TAURUS.

By D. G. Hogarth.

Maps, p. 739.

The journeys upon which the following paper is based were undertaken during the summer months of 1890 and 1891. In the former year I accompanied Prof. W. M. Ramsay (as I had done in 1887), and we were joined by the Rev. A. C. Headlam, Fellow of All Souls College, Oxford. We set out from Diner, the head of the Ottoman Railway, on June 16th, and proceeded by slow stages to the Lake of Egerdir. After rounding its southern end we struck through the mountains in an easterly direction, and descended upon the Lake of Beisheher, whence we proceeded to Konia. From that point we turned south into the Taurus, and crossed the mountains to the valley of the Gyuk Su (Calycadnus), which we descended to Selefke. After spending a short time in the mountains north and east of that place (the district of Olba and Korykos, described by Mr. J. T. Bent in a paper read before the Royal Geographical Society in 1890), we regained the central plateau near Eregli, and proceeded by Bor and Nigde to Kaisariye. Here we left for a time Mr. Headlam, who was in bad health, and made an excursion to Gyurun, in the region of the Anti-Taurus, returning by Shahr (Comana) and the pass called Kaz (or Gez) Bel to a point south of Kaisariye. Prof. Ramsay, who was obliged to return home to resume work in Aberdeen, left me there, and, having been rejoined by Mr. Headlam, I went southward to the neighbourhood of the Cilician Gates, and thence worked westward by Bor, Nigde, and Akserai to the Great Plains. We eventually regained the Ottoman Railway at Chivril, near Ishekli, on September 2nd.

In 1891 the original plan had been that Prof. Ramsay, who had been travelling for seven weeks in the west and centre of Anatolia, should meet myself and Mr. J. A. R. Munro, Fellow of Lincoln College, Oxford, at Mersina, and accompany us into the Anti-Taurus region; but he fell ill

before reaching the coast, and was obliged to return directly to England. Mr. Munro and myself, therefore, started without him from Adana on June 27th, and, passing the mountains, rejoined the track of the previous year's journey at Shahr. We turned south-eastwards from that point in order to follow the line of the Roman military road to the east, and to explore the south of the Anti-Taurus region. We reached Albistan, and made thence what was intended to be a short *détour* through the Taurus by Zeitun to Marash, before continuing our journey along the eastern road to Malatia. An accident, however, detained us many days in Marash: the cholera also became epidemic in Aleppo, and the province, in which we were, was placed in quarantine. Accordingly, when at last able to recross the Taurus, we had lost much valuable time, and saw certain detention on the frontier before us: the wisest course appeared to be to make for the province of Sivas, where the quarantine regulations were reported to be less strict than elsewhere, and we reached the frontier at Arslan Tash, not far from Derende. There we were detained, and, on release, went due northwards by Gyurun to Sivas, abandoning our project of exploring the Euphrates. In order to examine the neighbourhood of Nicopolis we journeyed up the Halys from Sivas and crossed the watersheds of the valleys of the Iris and Lycus, the latter of which streams we descended eventually to Niksar. Thence we went to Tokat, and followed the waggon-road by Amasia to Samsun on the Black Sea, which we reached on September 1st.

As our journey in 1891 was intended to complete the work we had begun in 1890, I combine their results in the following paper; but I have left out of account the earlier part of the former journey (*i.e.* the route from Diner to Konia) and the end of the latter (*i.e.* from the Taurus northwards to the Black Sea), and confined the present report to the homogeneous subject of the passes of the Eastern Taurus. I hope some day to travel again in the interesting region of Eastern Asia Minor, north of the Taurus, and to be able to combine our notes of 1891 with the results of wider and more leisurely observation.* The first part of our journey in 1890 (which I described orally to the Society on December 8th, 1891) I have omitted in this paper, because the route which we took then, though interesting for archæological reasons, has little value geographically, being off the direct line of traffic, and traversing no passes of importance: and also, I find that, owing to the fact that I suffered in the Pisidian hills from a sharp attack of fever, my notes are too scanty and my recollection too much confused to enable me to give an account of the region of the Lakes which could possess any independent value.

Throughout the paper I owe much to the notes and observations of Prof. Ramsay, with whom I was in 1890, and whose general principles

* Some description of our journey there in 1891 appears in Part III. of this paper.

of travel I have endeavoured to follow when not fortunate enough to be accompanied by him in person. Mr. Munro, who travelled with me in 1891, and Mr. Headlam, who joined our expedition in 1890, have assisted most materially in the following paper: the former took the photographs, shown to the Society on December 8th, and the latter almost all the barometrical and thermometrical observations recorded by us while he was of our party.

The districts visited by us in the past two years are among the most remote in Asia Minor, but only in Pontus did we explore virgin soil. The Konia district has been traversed by many before us, by Prof. Ramsay himself more than once, and by myself in 1887. In the "Low Taurus" we followed, more or less closely, the lead of Messrs. Hamilton, Laborde, Davis, Colonel Stewart, and Mr. Theodore Bent. The Anti-Taurus has been visited by Mr. Ainsworth, Sir Charles Wilson, Major Bennet, and Messrs. Sterrett and Ramsay, not to mention others less definitely bent on exploration; and our sometime-consuls traversed all important passes in the High Taurus. Asia Minor is, therefore, far from unknown, and the Geographical Society itself has heard a lucid and comprehensive account of it from Sir Charles Wilson: but nevertheless the peninsula is so large, so difficult to traverse, and withal of so varied a character in different districts, that much exploration must still be undertaken before either its ancient or modern geography can be known satisfactorily. To the archæologist it is the *terra incognita* of all others, which still hides among its mountains and under its soil the relics of a dozen civilisations: to the geographer it is a land of wild scenery and remarkable natural phenomena, a meeting-place of many races and creeds, the bridge between Europe and Asia now as in the past. No one who traverses it can avoid noting some new fact, and in the hope, therefore, that a good deal which I have to say may not be known already, I offer the following paper.

That part of the Taurus which bounds the plain of Konia and Karaman on the south forms a section easily to be distinguished from the continuation of the range west and east. From Karaman to the western end of the Bulgar Dagh, near Eregli, the system takes the form of a great ridge, sloping gradually from the plain to a broad summit, varying from 5000 to 6000 feet above sea-level, and falling to the southern sea in a series of steps; so distinct is this section from the broken ranges south of the Great Lakes on the west, or the tremendous walls, of which the Bulgar Dagh is the first, towards the east, that the general title of the Low Taurus may be applied to it appropriately enough; not because the elevation, which roads must attain to cross it, is much inferior to that of the passes through the other parts of the range, but because no peaks rise above the general level, and the gradual slopes give so easy a character to the hill roads, that the

evidence of the aneroid is needed to give the traveller any just idea of the height to which he has climbed.*

As the course of the roads, which traverse this section of the Taurus, is not conditioned by the presence of marked depressions or defiles, there would be little to choose between several alternative routes, all crossing at about the same elevation, if it were not for the scarcity of water in this region: the latter consideration, however, marks out certain lines which traffic has followed for many centuries and still adheres to, so far as there is any transport trade at all between Konia, Karaman, and the southern sea-board.†

These routes radiate from Karaman and Eregli, the chief centres on the southern limit of the Plains, to Ermenek, Mut, and Selefke, the

* It is reported that, whenever the Ottoman Railway Company reach Konia, they will survey a line to the sea, to cross Taurus at this point.

† See *infra*, p. 653. The vast majority of this trade now goes west and north from Konia, either to the Ottoman Railway at Diner, or to Constantinople direct. Little more than local traffic crosses Taurus.

The following altitudes are computed from observations taken by Prof. Ramsay and ourselves in 1890 and 1891, in the region north of the Taurus. Prof. Ramsay (W. M. R.) used R. G. S. aneroid No. 15, Mr. Headlam (A. C. H.) a private instrument. The heights in feet are as computed by the R. G. S. calculator from our readings of aneroid and thermometer, which I have added, wherever possible, in the second and third columns. It must be stated, however, that, wherever comparison is possible, the estimates of the surveyors of the Ottoman Railway between Diner and Konia are less than ours by from 200 to 400 feet. Ours are probably excessive all through.

JOURNEY FROM DINER TO KONIA. (W. M. R., 1891.)

	DINER.	Feet.		Deg. F.
May 29.	Jerit	3053	26·8	73·4
	Chandir	3068	26·08	77·9
	Duz Bel	5320	24·81	82·5
	Mentesh	4140	25·87	79
„ 30.	Sandukli	4210	25·76	77
	Karkin	4853	25·26	84
	Pass	7106	23·20	81·5
June 1.	Yiprak	5026	25·07	78
„ 2.	Yasili Kaia	6260	24·04	80
„ 3.	Karadilli	4634	25·07	77
	Aresli	4141	25·85	83
	Geneli	3758	26·23	77
„ 4.	Karaja Uren	4084	25·96	82
„ 5.	Dere Sinek	4206	25·7	60·8
	Midas Fount	3822	26·1	75·2
„ 6.	Ak Sheher	3720	26·24	78
	Devrent	3773	26·24	82
„ 7.	Arkut Khan	3847	26·16	77·5
	Ilghin	3702	26·32	81
	Bulasan	3617	26·37	83
„ 8.	Kulitolu Yaila	3710	26·22	76
	Shah Uren	4376	25·70	82
„ 9.	Ladik	4043	25·97	77
	Ridge	4427	25·6	86
	KONIA	3748	26·16	81 5

chief towns of the seaward slopes. South of the Taurus in this region there is hardly any level country at all, the mountains falling to the water's edge, except where a river, like the Gyuk Su (Calycadnus), has thrown out an alluvial tract into the sea: it was no doubt the absence of plain and the barren character of the hills, rather than any special ruggedness, which earned for this part of Cilicia in ancient times its epithet of *Tracheia*.

The three roads which lead south from Karaman are described briefly (from Colonel Stewart's estimates) by Prof. Ramsay.* We

JOURNEY FROM KONIA TO EREGLI. (W. M. R., 1891.)

		Feet.	
	KONIA.		
June 10.	Elolduren	3594	26·32
	Shatir	3661	26·26
	Hair Oglu	3683	26·24
	Ismil	3738	26·19
	Marsh	3705	26·22
	Ridge	3948	26·00
	Kara Bunar	3705	26·22
	Ridge	4004	25·95
	EREGLI	4123	25·85

JOURNEY FROM BEISHEHER TO KARAMAN. (A. C. H., 1890.)

		Feet.		Deg. F.
June 26.	BEISHEHER	4220	25·74	79·5
	Gulgurun	4537	25·50	84
	Chichikler	4568	25·41	80·5
	Bulumia	5103	24·94	84
	Chair Bagh	4336	25·59	75·5
	Konia	3748	26·16	81·5
	Plain	3822	26·06	75·5
	Khatin Seral	4175	25·82	76
	Appa	4079	25·67	82·5
	Almasen	4297	25·90	75·5
	Gudelissín	4114	25·62	78·5
	Iliara	3983	25·86	75·5
	KARAMAN	4063	{25·94 / 25·92}	83

I add here, for purposes of comparison, the following heights, communicated to W. M. R. by Colonel Stewart:—

	Feet.
BEISHEHER	3700
Kechi Borlu	3200
Tatarli	3781
Geneli	3400
Karaja Uren	3600
Chai	3550
Sakli	3550
Ak Sheher	3545
Kadin Khan	3400
Konia	3453

* 'Hist. Geog. of Asia Minor,' p. 362.

followed in 1890 a route to Mut slightly different from Colonel Stewart's, in that we made an elbow to the east in order to visit the ruins, first seen by the Rev. E. J. Davis,* on the upper waters of the Chivi Su, an affluent of the Calycadnus.

After leaving Fisandun (6½ miles from Karaman) about 3 miles behind us we forked left from the direct road to Mut, and ascended a stream (Ak Su ?) flowing between cliffs honeycombed with caves: from this circumstance a village in this gorge, about 10 miles above Fisandun, derives its name of Ak In, or the "White Caves": the peasants dwell in catacombs excavated out of argillaceous rock, and the huts seen by the traveller who enters the village are mere porches to the rock-dwellings behind. Similar troglodyte habitations are to be met with in Cappadocia both in the Anti-Taurus and in the region between Hassan Dagh and Erjies Dagh; the Kurds and Avshar who occupy valleys at an elevation of from 4000 to 6000 feet above sea-level, find that these subterranean dwellings are warmer in winter and cooler in summer than log-huts or even more substantial buildings.

The gorge of the Ak Su leads up to a desolate plateau, which swells gradually to 5500 feet, and falls away as gradually on the farther side. The dreary monotony of stunted herbage, stony water-courses, dry except when the snows melt, and hillocks, whose summits are indeed some 6000 to 6500 feet above sea-level, but hardly higher than the surrounding waste, is almost unbroken by human habitations. Not till the watershed had been left behind, and a considerable descent made in the valley of the Chivi Su, did we find Yuruk tents, and a less forbidding landscape.

A thousand feet below the watershed, however, a great and welcome change comes over the scenery: the traveller descends into open grassy valleys, fringed with pine-forest, through which run the infant tributaries of the Calycadnus. These coalesce presently in the Chivi Su, force their way through a cañon, impassable for horses, and break into the valley of the main stream.

The great valley of the Calycadnus, the most considerable in this part of Asia Minor, cleaves the mountains from north-west to south-east with a fissure twenty miles across, and fully four thousand feet deep at certain points. When we first saw the river from the brink of the northern wall we were standing at 5360 feet; we reached the water at Karadiken, below Mut, at 834 feet. Mut itself is 1479 feet above sea-level, situated on a shelf which projects towards the river from the base of the sheer wall.

The lower slopes of the northern and southern walls are thickly clothed with a forest of pines on the higher ground, and ilex, wild-olive, arbutus, lentisk, juniper, and other kinds of dense undergrowth on the

* 'Life in Asiatic Turkey,' p. 325. See *infra*, p. 652.

lower. We found the temperature in the bottom of the valley, owing to the dampness of the atmosphere, more oppressive than anywhere else in Anatolia: at the village of Yapanli (1007 feet), 5 miles north of Mut, the thermometer registered 106° in the shade at 4 p.m., on July 6th. The peasants of the valley go for the most part to *yaila* on the heights during summer to find pasturage and good water for their flocks, and to escape mosquitoes and fever. On the southern wall, however, where the villages are singularly rich in orchards, the peasants appear to be more stationary, probably from habit engendered by the necessity of guarding the fruit-crops. All are Musulmans with the exception of a small Greek and Armenian colony, established recently in Mut, and a solitary village, Ala Klisía, about 20 miles distant from Mut on the southern wall, inhabited entirely by Christians: we found that this isolated community had lately built themselves a church, in which they worshipped according to the Orthodox rites, but only the priest (a Samiote) spoke Greek. A ruined church, hard by the new one, seems to date back to the ninth or tenth century A.D., and the tradition of the villagers is that they have inhabited Ala Klisía, isolated from kinsmen or co-religionists, ever since the conquest of the valley by the Musulmans. The facial type is quite distinct from that of the latter, and is characterised by clear-cut features, large brown eyes, and crisped hair.

There seems no reason to doubt that in Ala Klisía we have a remnant of the Isaurian church, dating back to the days when the great monastery of Apadna was founded on the opposite side of the valley (see *infra*); and that its peasants rank with other interesting survivals of pre-Musulman populations in Asia Minor, who for the most part profess the Orthodox faith, though they retain little enough even of the form of its rites and nothing of its spirit. Instances of such "Greeks" are to be found at Permenda, near Ak Sheher, at Isbarta, Olu Borlu (Apollonia), and on the island of Nisi in the Lake of Egerdir, but they have little enough Greek blood in them and are in the main descended no doubt from the Pisidian mountaineers, who troubled successive masters of Asia Minor, even in Roman times. The colony on the island near Egerdir has a peculiar interest, as being perhaps descended from those Christians who in 1142 resisted the Emperor John Comnenus, preferring Musulman domination to Byzantine.* Mr. Headlam and I visited Nisi in 1890, and found that the Christian community had dwindled to about fifty families, living among a larger Musulman population. They have a new church, served by two *papas*, who represent as low a grade as Orthodox clergy can fall to in a Moslem land: neither priest spoke or

* Nicet. Chon. 50, Cinnam. 22, and see Ramsay, 'Hist. Geog.,' p. 389, who, however, is inclined to place the islands in question in the Beisheher Lake. Prof. Gustav Hirschfeld visited Nisi in 1874, and mentions it in *Zeitschrift d. Gesell. f. Erdkunde zu Berlin*, 1879, p. 292.

understood Greek, and no service is apparently held in their church except on the greatest festivals. The congregation possesses a vellum MS. εὐαγγέλιον bearing date 1462. The Christian islanders seem to be making some attempt to better their miserable condition, by communicating with their more prosperous co-religionists at Isbarta and sending children to be taught in the school at that place.

A Christian colony has survived to these days at Sille, 3 miles from Konia, some of whose members were evidently employed as skilled workmen by the Seljuk Sultans;* it is still the see of an Orthodox bishop, and the residence of the possessors of most of the trade of Konia. The region south and west of Erjies Dagh contains many Orthodox Christians, survivors of the church of Basil and the Gregories, but not Greek-speaking: they are miserably poor for the most part and ill-treated by the petty officials of the district, but derive some protection from the presence of an Orthodox bishop at Kaisariye (Caesarea). Lastly, far up the course of the Pontic rivers, Yeshil Irmak (Iris) and Kalkid Irmak (Lycus), we found in 1891 a number of Christian villages, which retained not only Orthodox rites but a language manifestly Greek, differing so far from that spoken elsewhere that neither we nor our Greek servant could understand it. These villages lie in deep valleys, completely isolated from the outer world, and their inhabitants are ill-spoken of by the Turks of the district, because, being, like the neighbouring Kurds, men of their hands, they have resisted interference, and retained sufficient wealth to live better than their neighbours and erect churches.

The Calycadnus or Gyuk Su (Blue Water) is fordable only at a few points below Mut: we crossed it at Karadiken on July 9th, and found the water under the left bank rise to our girths. The stream is at that point about 50 yards broad and of a dark blue colour. A mile above the ford is a ruined Byzantine bridge, remarkable for the structural fault of having round holes pierced in the piers at the spring of the arches in order to relieve the pressure of a flood. The result has been that the bridge has been weakened at the very parts which most needed strengthening, and accordingly the breakage has taken place there. This bridge, which is seven miles from Mut, is probably that crossed by Frederick Barbarossa and his army of Crusaders on June 6th, 1190: he followed thence a difficult hill-road, and on attempting to recross the river lower down near Selefke was drowned.†

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* The Gyuk Medresse at Sivas bears an inscription recording that it was built for Kai Khosref, son of Kilij Arslan, by one *Kalooyan* (*i.e.* Καλο Ἰωάννης) of Konia. I owe the translation of this inscription to Mr. Hubbard of Sivas.

† There is some difficulty about the Emperor's route: Tagenon (p. 14) says of his army, "Quendam altissimum montem in litore praefatae aquae (*i.e.* the Calycadnus) transivit;" and describes the extreme difficulty of the road. Yet the modern hill-road is not of a very difficult character; nor, had the Emperor taken it, would he have needed

The modern upper road passes by Zeine, Ala Klisía, and Gyuk Belen, which is a summer *yaila* of Selefke.* After ascending to about 3000 feet, it runs along the north face of the southern wall, winding round the heads of the valleys, and at Gyuk Belen penetrates through a nick in the wall and joins the unfinished waggon road from Selefke to Ermenek. From this point the well-wooded, well-watered hill-side is exchanged for a series of stony arid steps, down which the road winds and enters Selefke under the south side of the castle.

Laborde noticed but did not examine closely the remains of an aqueduct between Ala Klisía and Gyuk Belen: † unfortunately this fact was not known to us till after our return, and, attracted by the report of a *Kalé* in the opposite direction, we left the main road at Ala Klisía, struck into the hills to the south, and discovered in a glen about eight miles away a small temple *in antis* and the ruins of a Roman village. Thence we crossed the mountain wall to Aine Bazar, a *yaila* of Kelendri (18 miles south), and next day travelled to Gyuk Belen along the Ermenek road, south of the wall.

An aqueduct would not exist unless the site of some considerable city existed also not far away, and it is natural to infer that we might have hit on the ruins of Diocaesarea had we kept to the main road south-east from Ala Klisía.‡ It is not easy, however, to make out where Laborde actually saw this aqueduct, nor how near he approached to it. The Austrian explorers, Messrs. Heberdey and Wilhelm, have been in this district since our visit, and report no discovery of any considerable site: the ruins of a hill-fort, which they saw, seem to be those which we found on the brink of a rocky bluff overlooking the valley from the south: they are just to the left of the direct road from Ala Klisía to Gyuk Belen, seven or eight miles from the latter. Several courses of finely-squared and fitted masonry are standing, and there is a fortified approach from the north. Some rock-cut tombs and sarcophagi bear crosses, and are proved therefore to be of the Byzantine period, to which general considerations would naturally lead an archæologist to assign the fort itself.

Interesting also to archæologists are the considerable ruins at Mut, where we found an inscription confirming at last Colonel Leake's § guess, made ninety years before, that it was anciently Claudiopolis. Six miles

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to recross the river before reaching Seleucia. He did so, however, and was drowned in it (though Tagenon does not tell us so). I would suggest, therefore, that he took a road keeping nearer to the river, but was obliged to climb the hills at some points to avoid the precipitous gorge; and to reford the river somewhere before it emerges from the mountains. A low road is said to exist now, but no European has explored it.

* See Ramsay, 'Hist. Geog.,' p. 362, note 1, for Colonel Stewart's distances and altitudes along this road.

† See his 'Voyage en Orient,' p. 123.

‡ Ramsay, 'Hist. Geog.,' p. 364.

§ See his 'Asia Minor,' p. 117.

to the north, on a precipitous hill called Sinabich is a *sacra via* with inscribed sarcophagi and a wilderness of ruins, probably those of the Byzantine bishopric Dalisandus.* Following the direct road back towards Karaman, the traveller, who halts at a fountain about 12 miles from Mut, sees high up on the hill to his right a great grey ruin. This is the monastery, now known as *Koja Kalesi* (*Alaja Kalesi* of Laborde), probably that called Apadna in ancient days, which Procopius † states to have been *restored* by Justinian I. A tomb within the precinct bears date 461 A.D., and the architectural features of the church, whose shell is almost intact, are uniformly of a century as early as the fifth, and perhaps the fourth. ‡ There is little trace of Justinian's restoration, and we may regard this as the earliest church in the Eastern world which retains its primitive form and architectural features: indeed, the singular absence of Christian symbolism, and the ornamentation both of the church and the other ruins, suggest that Koja Kalesi was built while heathen traditions were very vigorous. The main features of the church are its basilica-form, combined with a Byzantine central tower, its beautiful monolithic columns and Corinthian capitals, its galleries within and without, and the ornamentation of its three square-headed western doors. It stands at the eastern end of a shelf under the topmost cliff of the northern wall of the valley: west of it are extensive remains of the monastery buildings, and of a portico open to the south, surrounding the court before the church. The whole is entered from the west by a remarkable gate, richly ornamented on the outside, and bearing winged figures carved in low relief on the inner side of its posts. The perfect preservation and singular character of the church, the extent of the monastic buildings, and their remote and beautiful situation, make Koja Kalesi better worth a visit than any Christian relic that I have seen in Anatolia.

Only less interesting are the ruins of a large city already alluded to as those first seen by the Rev. E. J. Davis, about 15 miles to the northward, below the *yaila* of Kestel, a little to the east of the direct road from Karaman to Mut. Here we have another early church crowning the site: south of it can be traced a long street, flanked for some distance by colonnades and by a bewildering mass of ruined houses, churches, and public buildings: this leads to the citadel, of which the square towers and curtain-wall are standing on two sides, while the enceinte of the town-wall can be traced round almost the entire circuit. Outside are many tombs, arched structures and sarcophagi. Nothing on the site is early;

* Ramsay, 'Hist. Geog.,' p. 367. See a paper by Mr. A. C. Headlam in 'Journal of Hellenic Studies.'

† De aedif., v. p. 328, ed. Bonn.

‡ This is the opinion of every architectural authority who has seen our plans and photographs. We have published a full account of this monastery in the 'Journal of Hellenic Studies,' to supplement the imperfect description of Laborde, the only other explorer who has seen the ruins. He travelled in 1826 in this district.

a good deal (*e.g.* the citadel) is distinctly very late; and there can be little doubt that the town is that Sebilia, whose Armenian prince came out to welcome Barbarossa on his march from Laranda to the Calycadnus. Prof. Ramsay thinks that the important city of Coropissos, afterwards renamed Hierapolis, preceded the Armenian Sebilia on the same site.*

The following are the observations taken by us on this road. The observations given in 'Hist. Geog. of Asia Minor,' p. 362, may be compared. [Taken by A. C. H., 1890.]

		Feet.		Deg. F.
July 3.	KARAMAN	4062	25·92	83
	Uren Oluk fountain	4807	25·22	82
	Watershed	5556	24·70	84
	Da Bazar ruins	4952	25·07	77
	Summit on road to Mut ..	5780	24·45	79
	North brink of valley	5363	24·78	81
	Yapanli	1007	28·80	82
	Koja Kalessi	4779	25·22	80
	Mut (Kahvé)	1479	28·30	75
	Karadiken (river level) ..	834	28·95	84
	Zeine	1584	28·22	81
	Jelle	3450	26·45	81·5
	South brink of valley	4518	25·50	..
	Torganlar	4349	25·65	..
	Aine Bazar	3740	26·15	76·5
	South brink above Kurtkoi	4598	25·43	..
	Kurtkoi	3613	26·32	83·5
	Gyuk Belen	3223	26·62	75
	SELEFKE	292	29·51	76

The direct road Karaman-Maghra-Selefke crosses the mountains some distance to the east of the route last described. It was chosen by Said Pasha when governor of Konia, as the line for the *chaussée* which he planned to connect his capital with the nearest seaport. His road was completed in 1887, but is not much used, partly owing to the fact that water is not to be met with on the road itself between a point 6 miles from Karaman and Maghra (50 miles), nor again between Maghra and Selefke (about 45 miles) without making a *détour* to Uzunja Burj (Olba): partly because of the rough state of the roadway, badly constructed originally, and allowed since to fall into hopeless disrepair: and partly owing to the unsatisfactory nature of the fever-stricken and ill-sheltered port of Selefke (Ak Liman).

It is unnecessary to treat of this road in detail, since its measurements are given by Professor Ramsay (*l.c.* p. 362, note 5), and the country through which it passes is similar in character to that described on the route Karaman-Mut. There is the same gradual ascent to an arid plateau (6100 feet) seamed with rocky ridges like the bones of the earth laid bare, and the same long descent over shelves wooded, but less beautiful and well watered than the downward grades on the

* 'Hist. Geog. of Asia Minor,' p. 366; see Tagenon, *l.c. supra.*

former road. The lower slopes on the sea face have been described by Mr. Bent, who visited Uzunja Burj and Maghra in 1890, and a few of the additions or corrections, geographical or archæological, which we had to offer with regard to his report were incorporated in his map and the articles written by himself and the Rev. E. L. Hicks in the 'Journal of Hellenic Studies.' The features of Olba, of Ura, of the hill-fortresses, the cave-shrines, the scattered *hiera* and *heroa* in the Lamus valley and on all the slopes, and the great chasms near Corycus have been set forth, though not very fully, by Mr. Bent, whom good fortune led to a veritable Pompeii, many miles in extent, left to decay on the desolate hills when the artificial water-channels fell into disrepair. With only a few brackish wells, and hardly any perennial streams, wandering Yuruks alone are able to maintain a precarious existence on this rocky waste. Nature is more slow to destroy than man, and thus have been preserved for us between Olba and the sea the Roman roads, towns, and villages, almost as they were when the Arabs first began to harry Cilicia. I will make especial mention here of one thing only in this wonderful land of the dead, because it is of distinctly geographical interest, namely, the paved road which connects Olba with Corycus. For 25 miles almost every stone of the pavement is in its place, and the milestones lie by the roadside or stand *in situ* recording the distance from Corycus and the titles of Emperors who restored the road. After leaving Jambazli it runs along the crest of a spur, passing through groups of ruined houses or tombs at every three miles or less; the traveller looks down on either side on villages showing white among the undergrowth; and, attaining the brink of the lowest shelf, can see the finely engineered curves of his road winding past tombs and hill-forts to the walls which still stand round Corycus. If ever Asia Minor becomes a land in which Europeans travel to see the marvellous, the district enclosed by the Lamus, the Calycadnus, and the sea will become famous: the ruins of Olba are the most remarkable in the peninsula, except those of Hierapolis on the Lycus, and perhaps of Adada at Kara Bavlo in Pisidia, whose lonely situation makes it as strange as, though in extent it is inferior to, the Cilician city: but Olba is only one, if the chief, among a score of sites in Cilicia which remain to bridge the gulf between the old Asia Minor and the new! *

* A more careful examination, than has yet been made, of these and other ruins in Cilicia is needed to determine how much of the standing walls and towers belong, like the citadel of Coropissos, to the *Armenian* period. Corycus (Gorrhigo) played a great part in the guerilla warfare of Christian and Musulman, while protected by kings of Cyprus, or knights of Rhodes, in the thirteenth, fourteenth, and fifteenth centuries. The conversion of the temples at the Corycian cave and Olba into churches probably dates from this period; and the paved road, described above, seems to have been repaired at a late date, to judge by the fragments of columns, &c., built into it. In fact, a large proportion of the remains in Cilicia, ascribed by Mr. Bent to the Pirates, may belong rather to the Byzantine or Armenian period.

Two other roads of some importance traverse the Low Taurus; one leads from Karaman direct to Mersina, and passes through Korash.* The other crosses this at Korash, in its course from Eregli to Maghra, a village situated on the Karaman-Selefke road. We followed this track in 1890: it coincides for 10 miles with the Karaman post-road, then leaves the plain and strikes over bare swelling hills to Divle, a large Turkish village. From this point to Korash, a double village on a stream flowing towards Karaman, the ascent is gradual and the landscape treeless and uninteresting. Three miles further a park-like grassy country, thickly studded with cedars, is entered, and the ascent becomes steeper up to Perchin Bel, the watershed between the Plains and the Mediterranean: the fine grazing land attracts to this spot a large Yuruk *yaila* in summer-time. The road now lies for some distance down the course of a stream whose banks afford rich grazing, on which large herds of horses and camels are maintained in summer. This stream flows to the Lamus.

After following the water for about five miles, the path climbs over the bare hills on the left bank and descends a rocky gorge to the Selefke road, which it joins rather more than six miles above Maghra.

The following are rough measurements and altitudes on this road:—

Miles.			Feet.
—		EREGLI	4123
20	..	Divle	..
27	..	Hamza Yaila, a little to right of the road	..
43	..	Korash	..
50	..	Perchin Bel	6350 (?)
53	..	Stream	..
60	..	Summit	6200 (?)
71	..	Maghra road	..
77	..	MAGHRA	4590

The native estimate is 24 hours for the whole distance: we wandered a little from the direct path between Hamza Yaila and Korash, but not enough to vitiate seriously the measurements given above. The abundance of grass on the eastern half of the Low Taurus as compared with the western is very remarkable, and speaks to a colder climate; we recorded, indeed, much lower sunrise temperatures than on the Mut road, viz., 48° on July 20th at 6200 feet, and 47° on July 21st, at about 1000 feet lower.

The High Taurus begins again with the Bulgar Dagh, which extends

* Colonel Stewart communicated the following observations, taken on the direct road Mersina-Karaman, to W. M. R.:—

	Feet.
Mersina	Sea-level.
Chatal Cheshmé	2550
Dumbelek Pass	7000
Kuchuk Korash	5000
Karaman	3262

from a point west of Eregli to the Cilician Gates. The northern slope is precipitous, and there are no important gaps in the long crest; the average elevation is about 10,000 feet, and the summits are never quite free from snow. The Bulgar Dagh rises like a wall out of a lacustrine plain which is the easternmost extension of the Axylon country: north and east of the basin are mountains, the Hassan Dagh, an extinct volcano, and the Ala Dagh, the first and highest of the north and south ranges which have received the general name of Anti-Taurus. Its central peak, a square tower of rock so steep as to admit of snow lying only in crevices, is only a less conspicuous object than the cone of Erjies. Two outlets from the lake-basin exist, one in the north-east corner, where, by crossing a depression between the Hassan Dagh and the foothills of Ala Dagh, the traveller attains to the plateau south of Erjies: and in the south-east corner, where the valley of a tributary of the Zamanti Su leads to the Cilician Gates.

This eastern corner of the Great Plains is a region interesting both to the geographer and the archæologist: among its remarkable natural phenomena are a great spring, which emerges as a full-grown river from under the Bulgar Dagh near Ivriz, flows down through a paradise of verdure to Eregli, and the lake in the lowest part of the plain, and, in winter, flows out on the north, plunges into a chasm, and is seen no more; and again the boiling pond near Ekuzli Hissar, once sacred to Zeus Asbamaeus, and still resorted to from far and wide by all afflicted with skin diseases. The archæologist recognizes in this plain the *Tyanitis*, ruled formerly by the priest-dynasty of the city of Tyana, whose remarkable ruins may be seen in the north-eastern corner at Ekuzli Hissar, of all sites in Asia Minor the most tempting to the excavator. Some day it will be shown perhaps that this priestly kingdom preserved to a comparatively late time the earliest written character—the so-called "Hittite" script—used in the peninsula, together with the seat of one of the earliest worships: the great rock-relief of Ivriz, erected probably by the Tyanean priests, is too well known to need more than mention; and we have now published other monuments, hardly less remarkable, from Tyana itself, and its silver-mines in the Bulgar Dagh.*

The High Taurus may be said to extend for 250 miles to the Euphrates, on which it abuts between Malatia and Samsat. The Anti-Taurus is an integral part of it in the same sense as the ranges about the Great Lakes further west: in both cases the watershed has been shifted far to the northward, and the streams seem to flow *through* the Taurus from the north, instead of down from its seaward slopes. This is a phenomenon particularly remarkable in the case of the Zamanti Su and the Jihan, which rise in the levels north of the main chain, and

* In the 'Recueil des Travaux relatifs à la Philologie,' etc., vol. xiv., edited by Professor G. Maspéro.

strike straight through the hills by gorges often impassable even on foot. In the Anti-Taurus region, however, the east and west line is preserved better than south of the lakes, and both from the north and the south presents the appearance of a wall cleft transversely by three great rivers, the Zamanti Su, Saros or Seihun, and Jihan.

Through the whole system from the Bulgar Dagh to the Euphrates, nature and man have rendered only six roads practicable for anything less agile than a goat or a Zeitunli Armenian.* These are, in order, the Cilician Gates: the pass leading from Sis into the Anti-Taurus, and bifurcating to Feke and Hajin: the three routes which radiate from Marash to Gyuksun, Zeitun, and Albistan (the last two coinciding for more than 20 miles): and a pass, approachable either from Marash or Samsat, and leading by Behesne to Pulat and Malatia. The last-named defile and that from Marash to Gyuksun I have never traversed; but as the others, important in ancient times and still much travelled, have not been so fully described, so far as I know, I will give some particulars of them here. †

1. Sis lies at the extreme northern limit of the Cilician plain country, two days' journey from Adana by a newly constructed but unfinished *chaussée* chiefly notable for the ruinous condition of its bridges, entire absence of villages, and great scarcity of water. No light *arabas* travel upon it, and the roadway is disappearing fast in the more marshy parts of the plain north of Sai Gechid. ‡

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* For example, this is said to be the character of the so-called road from Fraktin or Ferak-Din to Adana.

† All are described to some extent in Ritter's 'Erdkunde,' vol. xix., mainly from he accounts of Von Moltke, Tchihatcheff, Ainsworth, and Von Vincke, compared with native geographers, of whom the most important is the Armenian Injijian.

‡ We were so short a time in this plain (for we hurried to the mountains to escape June heat) that I cannot supplement to any purpose the account recently communicated to the Royal Geographical Society by Mr. Theodore Bent. I subjoin, however, some observations and notes of the Sis road:—

Miles.			Feet.		Deg. F.
—		ADANA	296	29·50	88
7	..	Summit	500	29·30	..
21	..	Well below Buruk	411	29·40	..
23	..	Plateau	689	29·10	..
28	..	Summit	1141	28·65	..
31½	..	Khan Dere spring	807	29·10	87
38½	..	Sai Gechid	500	29·30	89
47	..	Turmulu Chai bridge	..	..	..
55½	..	Sis bridge	.		..
56	..	Sis (Serai)	755	29·15	87

The estimated distance—14 Adana to Sis—quoted from Major Bennet by Prof. Ramsay ('Hist. Geog.,' p. 281), is by a different and shorter road. His readings are—Adana, 125 feet; Sis, 500; Missis, 100; Marash, 2300 or 2200.

The plain near Adana is highly cultivated. English agricultural machines have been introduced, and cotton-growing encouraged. The low ground near Sis is undeveloped, but would grow rice or cotton in abundance, as do the Lycus marshes near Niksar. We found many Yuruk camps on the plains, despite the scanty water-supply and the prevalence of fever and insect pests. The highest temperature, recorded by us, was 94° Fahr. at 4 p.m. on a thunderous afternoon on June 28th at Sis: at night the mercury hardly fell below 80°. The temperatures do not seem high, but the damp makes the air very oppressive, and we experienced much depression and lassitude during the four or five days we spent on the plain.

Sis, the capital of the kingdom of Lesser Armenia in the 13th century, and still the titular see of a Catholicos, is a decayed town of not more than 3500 inhabitants, almost exclusively Armenian Christians. The houses (many of them mere ruins) are widely spaced over the eastern slope of the isolated castle hill. A massive building, once a church, but now a Moslem *tekké*, half-way up the castle rock, and old houses here and there in the lower town, testify to better days. It is still the capital of a *sanjak*, and probably the smallest town in the Ottoman Empire which enjoys that dignity.*

Two important roads converge, shortly before reaching it, that from Adana, already mentioned, and one from Missis and Osmanie, which communicates with Alexandretta and the south country. On leaving Sis the united road strikes due north into the hills and surmounts the first rocky ridge (1300 feet) after a course of two miles. A mile further it bifurcates, the left-hand path going to Feke, the right towards Hajin. We followed the latter,† keeping up on the mountain side and ascending gradually to a low *bel* (1470 feet) whence an abrupt descent brought us to the Kirgen Su (940 feet), a tributary of the Saros. The road then ascends the valley for about twelve miles, crossing and recrossing the rapid stream by shallow fords.

The valley is very hot in summer, and infested with insect pests, but of wonderful beauty, enclosed by lofty crags and filled with various forest growth. It appears to contain no villages, only a mill or two, and in some years a *yaila*. On attaining 1500 feet, the path strikes up the steep eastern slope, at first by zigzags for 750 feet, then more gradually through pine woods to 3200 feet, whence a slight descent is made into a grassy valley which stretches to the foot of the first main

* Sis is very fully described in Ritter, vol. xix. pp. 67–96: our stay there was very short, owing to the heat, and we have little or nothing to add to Ritter's account.

† Briefly described, on the authority of Colonel Stewart and Major Bennet, in 'Hist. Geog. of A. M.,' p. 281.

chain of Taurus, and is studded with scattered Yuruk huts to which the name Tapan has been given.

The ascent of the main chain to the Kiraz Bel (5130 feet) is abrupt, and, after a small grassy hollow has been crossed, there is an almost equally abrupt descent on the north side to the Saros, whose tremendous *cañon* must be crossed before Hajin can be reached: the town is seen from the brink of the valley, but at a distance of at least five hours' ride. The wooden bridge which spans the deep, wildly rushing Saros (2300 feet) is reached in 2¼ hours, and the river can be seen emerging from one pathless gorge and disappearing again into another, even more impassable. Although nature has pierced these mountains in three places, not one of her ways can be trodden by loaded animals, and the roads climb laboriously from spur to spur instead of following the valleys. The path from the Saros bridge to Hajin ascends by easy gradients to 3200 feet; some attempt has been made to construct a *chausseé*, but, as none of the more difficult portions of the track have been dealt with, it is quite useless.

From Sis to the Saros the path traverses a wild and beautiful country, destitute, as it appears, of permanent villages and inhabited only by nomadic Yuruks. Water is abundant all along the line, and the valleys contain good pasturage. Though a Roman, or at least Byzantine, road * must have followed the same route, we could detect little or no trace of it—nothing more than abutments of a bridge and a little pavement in the Kirgen valley, not necessarily pre-Turkish, or at least pre-Armenian. After the Saros has been crossed, Armenian settlements appear, and the hill-sides are planted with vines, whose grapes are used as food only and constitute, when dried, or boiled down to a paste, the staple relish of the Hajinlis. Hajin † itself contains about 10,000 Armenians, and a few Musulmans: the town hangs, house upon house, on the sides of a steep hill, jutting southwards into the valley: all denominations are represented, Gregorian, Catholic, and Congregationalist Protestant, supported by a small mission station served by American ladies. The inhabitants are the most miserable and poverty-stricken population that I have seen in Turkey, equally devoid of the spirit and daring of the Armenians of Zeitun, and the commercial enterprise and capacity of those of Marash or Kaisariye. The lowest type of Turkish official seems habitually to be banished thither, and it is one of the few administrative centres still destitute of a telegraph. The Byzantine station of Badimon was not far from Hajin, but the present Armenian town is said not to be of great antiquity. There is no trace of it in the chroniclers, Christian or Musulman, of Lesser

* See 'Hist. Geog.,' *l.c.*

† A view of Hajin, taken from the path to Urumlu, is given in Tchihatcheff's Atlas.

Armenia or of the later Byzantine Empire, and it seems probable therefore that, like Zeitun, it was a city of refuge colonised by broken Armenians after the collapse of their Cilician kingdom in the 14th century.* It must, however, have been far less successful than Zeitun in maintaining its independence of the Ottomans.

North and north-west of it are several Christian villages, Armenian and a few Greek, all miserably poor. In the open valley of Shahr Moslem Circassian refugees have been settled in large numbers, and like all new-comers from the Caucasus, enjoy a very bad reputation for maltreatment of Christians. I will return to the subject of these refugees and their relations with the Armenians when treating of the Anti-Taurus, which may be said to begin with the plateau of the upper Saros (5200 feet): to which the north road ascends in two hours from Hajin.†

2. The next pass to the eastward, is that from Marash to Gyuksun (the ancient Cocusus) which lies in a depression between the wall of Taurus and the end of the eastern Anti-Taurus range, the Bimboa Dagh.

I have seen nothing of this route except its last section in the Gyuksun plain, but can record the concurrent testimony of several natives of Gyuksun, of the Hajin Americans, who traverse it frequently, and of both Americans and Armenians of Marash, that it is now by far the easiest road through the Eastern Taurus.‡ The gradient on the south is said to be remarkably easy; that on the north is certainly not particularly steep. The pathway is said to be *dur*, i.e. level; the

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* Ritter (xix. p. 157) asserts positively that Hajin and Zeitun were founded by Armenian exiles after the surrender of King Leon at Gaban in 1375; but he quotes no authority and is probably arguing from the silence of the chroniclers. I failed to hear of any native tradition which might establish the point; the Rev. T. Christie of Marash says, however, that the general Armenian belief there coincides with Ritter's statement. Armenians were settled in this district in the eleventh century, for "Vahga," which Roupen took, is probably Feke, and other fortresses, mentioned in Armenian chroniclers, *e.g.* Pardzepert and Goromozol (founded by Roupen), belong to the Hajin district. Hajin may very well have been originally a Roupenian village, which emerged from obscurity when the mountains, which had been deserted for the rich southern plains, were once more filled with Armenians. We saw a castle outlined against the sky on a lofty peak west of the Feke road, some ten miles north of Sis: this may be Pardzepert, taken by Roupen, and later made a treasure-house of the kings of Sis.

† The ancient road, Hajin-Gyuksun, is described briefly by Sterrett in his 'Epigraphical Journey,' p. 239. I have not traversed it.

‡ Von Moltke travelled from Marash to Gyuksun on his way north from the battle of Nisib. He describes his road as difficult ('Briefe, etc., in der Türkei,' p. 398); but he had not seen the other passes through Taurus except those near Malatia. He also had to take an unfrequented route to avoid the Kurds and Turkmans, and may not have travelled by the ordinary caravan road at all, but by some mountain path.

distance is stated at eighteen hours, and no villages, but only summer *yailas*, are reported on the route. The Rev. C. H. Robinson, who crossed this pass in the early part of 1892, confirms (in a letter to me) the view, here recorded, of the easy character of the route; he also mentions a Christian village, Takir, on it some sixteen hours from Marash; but he wandered so much from his road in the snow that I cannot be sure that this village is on the direct path. Considering the difficulties of the Albistan-Marash route, and its greater distance from Kaisariye, the ancient centre, it is remarkable that that pass should have been so much more important in ancient times than the Gyuksun-Marash road. The latter was taken by the Emperors Basil in 877, and by Romanus Diogenes in 1068, but the former had to cut his way through the forests along an evidently little-used track. The explanation of the invariable use of the more easterly pass probably lies in its having been the more direct in early times when Pteria, not Mazaca-Caesarea, was the capital. The monuments found by us at Arslan Tash and Izgin point to the existence of an early civilisation on the line of a road leading due north from the pass, which would condition the course of the great south road in after ages, as the great cities in northern Cappadocia conditioned the course of the Persian Royal Road, long after their civilisation had become a thing of the past. It must also be noted that the difficulties of the *modern* Albistan-Marash road are probably far greater that those of the *ancient*. (See *infra*, p. 668.)

3. The other routes leading northward from Marash were traversed by us in 1891. They coincide as far as the Jihan bridge, 21 miles: to avoid a long *détour* the north road crosses by very steep and rocky gradients the Akkar Dagh, which rises 3000 feet above Marash. The Jihan is thus reached, and its left bank followed for about four miles to a small *devrent* built for the protection of travellers, and especially to guard the bridge, so often destroyed by the Zeitunli Armenians, and rebuilt for the last time about a year ago. This place is called Paj. The Jihan (anciently the Pyramus) is the most considerable river which flows to the Mediterranean from Eastern Asia Minor. Rising as it does from springs of extraordinary volume, and being joined almost immediately by the Sogutli Irmak, the Khurman Su, and the Gyuk Su, it is an unfordable stream almost from its birth: we rode through its tributary, the Khurman Su, with some difficulty near Izgin, but could not have forded it three miles lower down after the great springs west of the village had added their contribution. The Gyuk Su comes in on the right about five miles lower still. Throughout its course the Jihan is of an ochre tint, and extremely rapid, its fall being 2000 feet in (about) 80 miles. At the bridge of Paj, 21 miles from Marash and about 80 miles from the source, we estimated the width of the main channel in midsummer (July 30th, after a spell of fine weather) at 150 feet, and it was evident from marks on the banks that in spring it flowed at that point

fully 400 feet broad. In spite of the amount of earth held in solution, its water was quite drinkable in July.*

The roads to Zeitun and to Albistan diverge at this point.

a. That to Zeitun crosses to the right bank of the Jihan by the Paj bridge, which spans the main channel by the help of a pier of mortared masonry, resting on a rock in mid-stream. A causeway of similar construction with one opening carries the road across the spring-flood bed; the roadway is of wood, with a rail on each side. The whole structure is flimsy, and not sufficiently elevated above the water.

The path soon leaves the Jihan and follows the course of a tributary stream, the Zeitun Su, for about four miles through sparse, stunted forest: in order to cut off a corner it then climbs the slope of the left bank and proceeds over a cultivated plateau, passing at three miles a hot spring called Ilija Hamam, whose waters we tested, and found to be 104° Fahr.; it emits a smell of sulphur, and is of a greyish tinge. The Zeitunlis, who suffer much from skin diseases and scrofulous maladies, value it highly. From that point to Zeitun the path keeps at about the same level, rounding the heads of earthy gullies which run down to the Zeitun Su.

The population of Zeitun is reported to be about the same as that of Hajin, and the town hangs in the same way on three sides of a spur jutting northwards into the gorge of the Zeitun Su; at the extremity is a castle. The town, however, extends more over the hill behind the spur, is more picturesque, better built, cleaner, and more alive than Hajin. On a hill which commands it from the south-west the Ottoman Government have built a fort and battery, connected by telegraph with Marash. The slopes of the gorge on both sides have been covered by the energetic Armenians with vineyards, orchards, and corn-fields wherever nature allows, and few prospects in Asia Minor are more charming than this magnificent valley, with its tumbling stream, scattered gardens, and the picturesque town perched on an eyrie above. We found it hard to realise that in this smiling region more trouble had passed during the last century than in any other part of Asia Minor.

So, however, it is. Zeitun has been the robber-town *par excellence*, a thorn in the side of every Pasha of Marash, the fighting remnant of the independent kingdom of Lesser Armenia, whose last prince was captured in 1375 at Gaban, not far from the point where the Jihan emerges from Taurus. The facial type and spirit of the free Armenians have survived here: tall, handsome, though somewhat sharp-featured, agile as goats and brave as lions, the Zeitunlis maintained their independ-

* See for a description of the Jihan at its source, Von Moltke, 'Briefe, etc.,' p. 329. The Jihan Pass was important as a trade route in the time of Leon II. of Armenia (1199); for he reserved it, with three other passes, for certain seigneurs, when he leased the customs of his kingdom to the Genoese (Dulaurier in Armenian vol. of 'Recueil des Hist. des Croisades,' intr. pp. xxvi. xcviii.).

once till some fourteen years ago, when the Turks made a great effort to break their stubborn backs, and built the fort which now commands the town.* They have more than once been saved from sterner chastisement by the strenuous mediation of the American missionaries at Marash, one of whom, the Rev. T. Christie, at one crisis rode the four days' journey from Marash to Aleppo in a day and a half in order to carry a letter of remonstrance to the Vali of the province. The Zeitunlis, indeed, are not quite subdued yet: hardly a year ago they were in open revolt, and were saved from bombardment by the Americans. The cause, in the last instance, seems to have been injudicious conduct of the former Pasha of Marash; and fuel was added to the flames by a report that a Government doctor who had been sent to vaccinate the children was really a poisoner.† Spies were murdered, the Paj bridge burned, the passes blocked, and guerilla warfare begun; but a display of force and mediation brought in all but the boldest brigands in a few days, and the energetic measures taken by the Government, who promptly arrested the bishop and other notables, have resulted in the place being cowed for the present.

From their own point of view the Government has been justified in showing severity towards these obstinate Ishmaelites, who in the days of their *dere beys*, and more recently under Babic and other descendants of the native princes, have blocked the passes and grievously impeded communication in the Taurus. Peace and quietness are not likely, however, to be secured permanently, so long as a policy of simple coercion is practised towards a people so vigorous and proud as the Zeitunlis; if the Porte would replace the old chiefs by a Zeitunli *Kaimakam* acceptable to the natives, and allow the Zeitunlis to collect their own taxes and pay a fixed percentage to the Pasha of Marash, there would be some chance of peace in this hornets' nest. So long as they hold the fort the Turks can command the town, but unless a policy of conciliation is carried out they will have continual trouble in the passes and outlying districts. A limit should also be imposed to the encroachments of the Circassians from the direction of Funduk.‡ An amicable arrangement might then close a struggle which has been carried on with energy and courage on both sides; and an interesting remnant of the mediæval kingdom would not be utterly obliterated.

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* The history of their troubles, up to about 1856, is told briefly in Ritter, vol. xix., pp. 158 *ff.* 37.

† This was apparently a wholly unfounded accusation: Zeitunlis, men, women, and children, are impregnated with hereditary disease, aggravated by centuries of close inbreeding; some of the more weakly infants died of their vaccination sores simply owing to badness of blood. Of this I was assured by Armenian doctors, who would not have excused the Ottoman Government had they really thought it guilty of a sinister intention.

‡ See below, p. 676.

The early history of Zeitun is wrapped in obscurity. The only Byzantine town, to which it could correspond, is the "famous" fortress Adata * or Hadath, evidently a place of great strength on the north road from Germanicia (Marash). Prof. Ramsay thinks, however, that Adata was nearer to Marash and the mouth of the pass than Zeitun (see *infra*, p. 668); and it must be admitted that the latter town seems to contain no vestiges of antiquity. If it was originally an Armenian foundation it may be one of the robber towns from which the Roupenian princes descended in the eleventh century, or a city of refuge, founded by the Christians in the fourteenth century, after Marash had been lost. Like Hajin it is never mentioned by chroniclers before the fall of the kingdom, nor does it occur in any list of Armenian strongholds.† As Ritter states (xix. p. 157), this remote and defensible valley was the natural place for the broken Armenians to fly to after they had lost Gaban; but (as in the case of Hajin) it must be remembered also that all the line of Taurus from the Cilician Gates to Khesun and Behesne was occupied by Armenians in the eleventh century, and numerous villages must have existed which remained nameless till the Armenians returned northwards in the fourteenth century. Also, as the story of the banishment of St. John Chrysostom at Gyuksun shows, these hills were full of robber strongholds in the fifth century. It is hardly safe therefore to argue either from negative evidence or vague tradition that there was no settlement at all in the inviting vale of Zeitun before the fall of Gaban in 1375: though no one will contest the assertion that all the importance of Zeitun as well as Hajin dates from that catastrophe.‡

On leaving Zeitun the path descends to the water again, crosses it by a stone bridge, and immediately ascends the right bank by a series of steps and zigzags to avoid the gorge from which the stream emerges at this point. This difficulty passed, the traveller continues to climb more gradually up the narrowing gorge, and crosses and recrosses the water several times. Before him he sees the snow-streaked cliffs of Beirut Dagh (a section of the main chain of Taurus) round whose western shoulder he must go. Emerging at last at the head of the valley, he finds himself at 7450 feet on a spur of the mountain, but must cross a depression 700 feet deep and reascend again to a *col* over another spur equally high, before he is well round the corner. Since leaving Zeitun he will have seen no village of any

* 'Hist. Geog.,' p. 278.

† Such as that given on pp. 636-8 of the Armenian volume of the 'Recueil des Hist. des Croisades.' The list enumerates the seigneurs present at the coronation of Leon II. on January 6th, 1199.

‡ Paul of Aleppo ('Travels of Macarius,' p. 451) refers to Zeitun as "the well-known Armenian town." He gives a vivid picture of the difficulties of the Albistan-Zeitun-Marash road.

kind; in summer a small *yaila* is established left of the road near the Ala Bunar, not far from the crest of the first spur: the gorge is exceedingly narrow and precipitous and the path often perilous enough. A steep but not difficult descent leads from the second summit down the *Beirut Jebel* passing a *yaila* right and another left, 10 minutes and 30 minutes respectively from the highest point. Snow was lying in patches on the northern slope of Beirut Dagh as low as 8000 feet on July 10th. The highest point of the mountain must be between 10,000 and 11,000 feet. At the northern gate of the pass is a little Musulman village, Erejik, garrisoned by about 40 Arab soldiers, intended to shut the Zeitunlis from the rich plains. The foothills which decline to the Gyuk Su and Jihan from this point, are inhabited by Turks and Circassians; the lower levels are exceedingly rich, both in arable and grazing land, and are dotted with numerous villages. The Khurman Su is crossed five or six miles from Albistan by a rickety wooden bridge. The features of the plain of Albistan may be considered more appropriately in connection with the Anti-Taurus.

b. Beautiful as the Zeitun route is, it is eclipsed by the grandeur of the Jihan gorge, through which passes the *direct* track from Marash to Albistan. It diverges from the Zeitun road at Paj, and keeps to the left bank of the river, proceeding for about six miles along easy slopes or the grassy strip which borders the water. All at once, this belt of turf ceases and the sides of the gorge, which have been gradually rising higher, approach and enclose the stream between walls of rock 2000 feet high. On the right bank hardly a goat could clamber: on the left a fringe of fallen rocks affords a possible passage for about a mile, until a great rock which juts from the mountain wall and falls 800 feet sheer to the water bars the way. Right under this rock we saw the ruins of a bridge, whose abutments on either bank and pier on a rock in midstream remain: the masonry appeared to be Byzantine so far as we could judge from a little distance (for the bridge is absolutely cut off from approach by the precipitous nature of the banks) and it was obvious to us that the ancient road was carried, perhaps by artificial embankment, to this bridge, across the Jihan, and then along the right bank, which presently becomes more practicable. In this way it avoided the great jutting crag which we had to ascend by a ladder rather than a path, and descend by a way hardly less difficult. This part of the road is known far and wide as the *Kussuk*, the most precipitous path through the Taurus: its difficulties add at least one and a half hours to the time occupied on the route, and the strain of the ascent and jar of the descent are serious drawbacks. Compensation, however, is to be found in the magnificent prospect from the summit of the crag: southward a ribbon of water winds between tremendous walls, which can now be seen to their full height. The Beirut Dagh on the right is not less than 10,000 feet. The

southern face of the rock which the traveller has just climbed is thickly clothed with trees clinging to crevices and overhanging torrents which dash in a series of falls to the main stream, and far below a belt of trees fringes the river. The upper slopes of both walls are covered with pine forest, out of which rise the bare crags of the summits. Northwards the prospect is similar, but more open. We found the narrowest part of the gorge swept by a strong northerly wind, which roared through the pass and added a terror to the worst parts of the path.

The track reaches the water-level again at a small guard-house, having been met a quarter of a mile earlier by a path brought from the right bank over a modern bridge of similar construction to that at Paj: this path, we were informed, comes direct from Yarpuz. The Albistan track presently passes a small Turkman and Armenian village called Hajin Oglu, situated at the point where the gorge opens out into a fertile valley, wooded on the west to the river's edge, but spreading in a belt of cornfields and grassland on the east. The worst difficulties, but not the fatigue of the route, are now over: the river gorge contracts again, and the path leaves the stream-level and takes to the hills, no longer precipitous but still steep. A weary climb brings the traveller to a plateau 2000 feet above the river, bare but fertile, dotted with threshing floors, or cultivated by Marashiote Musulmans, who establish a *yaila* every year upon it. No permanent village exists nearer than Ambararasi, a very small hamlet six hours south of Albistan. Throughout the eastern Taurus villages are rarely met with: the difficulty of communication with the plains on either side, and the predatory habits of the mountaineers,* have no doubt contributed to deter both Musulmans and Christians from settling in the well-watered, well-wooded valleys: Circassians are now beginning to ascend higher and higher from the northern plains, but until their arrival, a few Turkmans only intruded on the western mountains ranged by the Zeitunlis, or the eastern, newly colonised by the Kurds.

From the Marashiote *yaila* (Chilal Oglu Kurtul) to Albistan the path is tedious in the extreme, constantly varying in level as much as a thousand feet in crossing the foot-hills which border the Jihan and fall gradually to the plain, and descending into or climbing out of the valleys of tributary streams. Their earthy slopes for the most part are bare of trees, but support several villages, Armenian and Turk (of which Ambararasi, Okukoi, Jellinga, and Kukuje are on or near the path), and

* This has been their character for many centuries, as witness the "Isaurian" freebooters who harried Gyuksun and Yarpuz while John Chrysostom was in banishment in this district (404 A.D., v. *infra*, p. 717). Later on the Turkmans broke into the higher valleys (see Vaghram of Edessa, *Chron. rimée*, p. 527, lines 1252 *ff.*, ed. Dulaurier in 'Rec. des Hist. des Croisades').

yield all kinds of crops abundantly. Four hours from Albistan is a famous medicinal spring (Ichme Su), reported by the local Armenian doctors to have powerful diuretic properties: the water is applied both externally and internally: we tasted it and found it a strong saline, impregnated with iron. About a dozen tents were pitched round the well. The following table will show roughly the variations of level on both roads, and the approximate distances:—

Miles.			Feet.		Deg. F.
—		MARASH (top of the town) ..	2628	27·23	85
4	..	Pass over Akkar Dagh ..	5562	24·60	..
9	..	Cham Bunar	3462	26·45	..
14	..	Betli Chai	..	..	..
21	..	Paj *devrent*	2330	27·47	67
29	..	Ilija Hamam	3858	26·10	85
34	..	Zeitun bridge	3833	26·10	78
		Summit of zigzags	5210	24·90	..
46	..	Ala Bunar yaila	6758	23·50	61
48½	..	First summit of Pass	7451	23·05	..
52½	..	Second do. do.	7426	23·07	..
54	..	Yuruk yaila	6517	23·75	69
58	..	Erejik	..	..	..
66	..	Kawak Agach	4295	25·65	65
69	..	Khurman Su bridge	..	..	..
74	..	ALBISTAN	4100 (?)	..	..
25½	..	Spring	..	..	..
27½	..	Foot of "*Kussuk*" Crag ..	..	..	..
28½	..	Summit do. do.	3401	26·50	..
31	..	*Devrent*	..	..	..
32½	..	Hajin Oglu	3292	26·60	..
38	..	Summit of steep ascent ..	5071	25·00	..
45½	..	Chilal Oglu Kurtul yaila ..	6061	24·15	..
52½	..	Ambararasi	..	..	..
55	..	Summit	5882	24·30	..
58	..	Hala Su	4350	25·65	..
59	..	Ichme Su (medicinal)	..	..	..
66½	..	Summit	5669	24·30	..
71	..	ALBISTAN	4100 (?)	..	..

These are the roads in modern use between eastern Asia Minor and northern Syria. Which of the two last described corresponds to the famous pass from Arabissos (Yarpuz) to Marash (Germanicia), so often traversed by Byzantine and Musulman armies?* Probably neither the one nor the other exactly. The ancient road from Yarpuz to Marash would have had no occasion to touch Albistan (whose importance is of recent growth), but would have followed a track still in use, which turns off south from the Albistan road just before reaching the great springs west of

* See 'Hist. Geog. of Asia Minor,' pp. 276 *ff.* and 311.

Izgin, and, rounding a corner of the hill, joins the Albistan Zeitun track, five miles from the former town and just south of the Khurman Su bridge. It did not, however, I maintain, continue viâ Zeitun, for on the one hand there are no traces of an ancient road on that route, and on the other there are remains in the Jihan gorge which show beyond question that a road passed that way in Byzantine times. I refer to the ruined bridge mentioned above, and to cuttings in the rock and traces of pavement on the left bank below the bridge. I believe, therefore, that the ancient track, instead of taking the Zeitun route or climbing the foot-hills on the left bank, hugged the right bank of the Jihan *all the way* to the now-ruined bridge. When (coming from Marash) we turned up to the hills on the right at the *yaila* of Hajin Oglu, we saw a track continuing to follow the opposite bank at the bottom of the valley: we were assured it was little used (as is no doubt the case, since it would not lead to the modern centre, Albistan, but to what are now unimportant villages in the flat plain of the upper Jihan, and to Yarpuz), out of repair, overgrown, and very narrow. This, I feel sure, was the line of the old road. After crossing to the left bank by the bridge, near the *Kussuk*, the ancient road coincides with the modern, as far as the point 3 miles below Paj, where the modern track to Marash leaves the river and strikes over Akkar Dagh: on that track, however, there are no further traces of an ancient roadway, and, therefore, it is probable that the Byzantine highway continued to hug the river till it had rounded the western end of Akkar Dagh, and that it came into Germanicia along the level. The "famous fortress," Adata, therefore, which guarded the mouth of the pass, must be looked for where the Jihan emerges from the Taurus into the plain of Marash, some miles west of the city.

The ancient route was, therefore, much easier and shorter in time, if a little longer in distance, than the modern. It eschewed those great variations of level which render this route so toilsome at the present day, and circumvented the notorious *Kussuk;* but it has fallen into disuse owing to the shifting of the trade-centre on the north from Yarpuz to Albistan, and, probably, to some catastrophe which ruined the bridge below the *Kussuk;* sooner than repair the easier route the Turks would scramble over the rocks till the day of doom!

This remarkable defile may be better known to Europeans some day than now, for it will afford the best possible passage for a railway between Asia Minor and Syria. The Jihan has hewn a stupendous cutting from the flats north to the flats south of the Taurus; the fall throughout is regular if rapid, and the construction of a railway would offer no serious obstacle to modern engineers. The gorge of the Jihan presents far fewer difficulties than those of the Zamanti and Saros, and gives more direct access to the Euphrates valley: a railway conducted by either of the other defiles would still have Amanus to cross between

Cilicia and Syria, whereas by the Jihan route the Euphrates could be reached at Birejik without any further obstacle of a serious nature having to be overcome.*

The ANTI-TAURUS, properly so-called, consists of two ranges which enclose the valley of the upper Saros, and lie at right angles to the general direction of the Taurus; but it is usual to include under the term the Ala Dagh, which runs due north for about fifty miles from the Cilician Gates, and has been described as one of the loftiest ranges in Asia Minor. There is really more affinity between this mountain and the westernmost of the Saros ranges, than between the latter and the Bimboa Dagh on the east of the river: for the last named belongs to a distinct system, and is divided from the main mass of Taurus by a deep and wide depression; whereas both the Ala Dagh and the range west of the Saros (it has no single name) are jointed to the Taurus at their southern extremities and hardly distinguishable at first from it. It would be very hard, for example, to say at what point the Saros ceases to flow through the Anti-Taurus and enters the Taurus.

The western Saros range springs up abruptly on the east of the rolling country of western Cappadocia, where east and south of Erjies the Ottoman Government has settled a medley of tribes, Kurds, Circassians, and Avshar, among the Greeks, Armenians, and Turks. This region is almost entirely treeless, very fertile, and, being of an average height of 4000 to 5000 feet above sea-level, is cool in summer. Northwards both the Saros ranges are merged in the higher plateau of Uzun Yaila, the Circassian stronghold, a vast rolling expanse well watered but treeless and seldom elevated less than 6000 feet above the sea. In this, the most northern point of the Mediterranean watershed, the Zamanti, the Saros, and the Khurman Su take their rise.

The western range is composed of several small mountain groups mostly rising to about 10,000 feet, with low intervening depressions. The traveller coming from the west has a choice of seven passes whereby to enter the Saros valley, but of these only three are in common use. The seven, taken in order from the north, are:—1. Yedi Oluk. 2. Kabak Tepe. 3. Kuru Chai. 4. Kuru Bel. 5. Gyuk Bel. 6. Dede Bel. 7. Kaz or Gez Bel.

I have crossed Nos. 1 and 7, but unfortunately have never seen the most important pass of all, No. 3, the Kuru Chai. The rest are unimportant and difficult tracks, No. 5, crossed by Sterrett in 1884, being perhaps the most frequently used.

The three principal passes (Nos. 1, 3, and 7) are all fairly easy;

* The easternmost pass from Behesne to Malatia I have never traversed. An account of it is contained in Ainsworth's 'Travels,' i. p. 262; and the ancient routes in that district are enumerated in 'Hist. Geog.,' p. 280. Hafiz Pasha dragged guns over the Behesne Pass in 1839.

a good carriage road could be made over any one of them with very little cutting or embanking: in fact, we took a light waggon over both the Yedi Oluk and the Kaz Bel in 1890, in the former case with much difficulty, owing to the trees which block the path on both sides of the summit; in the latter with comparative ease, though the road had not been prepared for wheel-traffic. I believe that no four-wheeled *araba* has crossed either pass before or since, but our venture shows how easily a good wheel-track could be made. The Kuru Chai is reported easier even than the Kaz Bel: it is the defile through which the Roman military road to the east was carried,* and it is traversed by a principal route between Kaisariye and the Albistan district at the present day.

The *Yedi Oluk* is really a pass leading southward from Azizie (on the edge of Uzun Yaila) into the Saros valley, but it can be entered from the west by crossing a depression north of Kara Kilise Dagh,† and striking the Azizie road near the Avshar settlement of Guljuklar. Professor Ramsay doubts whether the Romans used this pass as a direct route to Caesarea, but decides that a road from Ariarathia (Azizie) came this way to join the great east road after its descent from the Kuru Chai. From Guljuklar the track runs due south up the valley of a tributary of the Zamanti, crossing and recrossing the bed: the incline is very slight and the track smooth. After 7 miles, near the head-waters of the stream, the path turns to the east and climbs to the watershed which is here comparatively low. For horses the ascent is quite easy, but as no attempt has been made to engineer the road, or lop the trees, the last gradients proved terribly difficult for our waggon; indeed we spent one and a half hours in surmounting the last 200 yards, and had to unload everything. A track similar, but more thickly beset with trees, leads diagonally down the farther side, and we found that it was not feasible to take the waggon down the path; we were forced, therefore, to adopt the hazardous expedient of locking its wheels and letting it down a dry watercourse with ropes, which, strange to say, we accomplished without disaster. Once down the first steep we found a fair, unencumbered track leading down by a tributary of the Saros, but our troubles were not over, for careless driving on the part of our *arabaji* at a steep side incline resulted in waggon and horses rolling down the mountain side for about 50 feet; luckily the latter were not hurt, and we patched up the waggon sufficiently to admit of its pro-

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* Ramsay, 'Hist. Geog.,' p. 271, and Part II. of this paper. Most unfortunately we left our aneroid behind us in Kaisariye in 1890, and did not discover the fact till too late to send back. I can give no altitudes, therefore, in the northern part of the Anti-Taurus region.

† In 'Hist. Geog.,' p. 271, a statement of distances, &c., is given; Sterrett ('Epigraph. Journey,' p. 306) states that he crossed by this pass, but gives hardly any details.

ceeding to the Saros without further mishap. It must be conceded, however, that the Yedi Oluk is not yet exactly "practicable for wheels." The distance through the pass from the Zamanti to the Saros is 24 miles.

The *Kaz* (or *Gez*) *Bel* is the southernmost pass and carries an important road from Kaisariye to Hajin, and so to Sis and eastern Cilicia (see p. 658). This route, reached from Syria through the gap between Amanus and the Giaur Dagh, was perhaps used by Assyrian armies in their expeditions to Tyana and south-western Cappadocia. It is possible also to reach Comana or Gyuksun (Cocusus) directly by this pass: for, once the western range is crossed, tracks are found leading across the broad, rolling valley in all directions.

More labour has been bestowed on this road than on that through the Yedi Oluk, and we experienced little difficulty on either slope. The pass begins at the small Turkish village of Seraijik, and ascends gradually in an easterly and then a northerly direction, keeping high up on the right bank of a stream which flows to the Zamanti. The valley is finely wooded but contains no villages. The level of the stream is reached about three miles up, near its source, and then begins the ascent of the watershed, a sharp ridge up which the road is engineered in very steep zigzags, intended for the passage of bullock-*arabas*, but not impracticable, though difficult, for lighter vehicles. The eastern slope is easier, and the upper plateau of the Urumlu Chai is reached in about three and a half hours from Seraijik. The main road turns south-eastward to Urumlu; that to Shahr north-eastward, and reaches the level of the Saros valley by an easy descent of two hours. Not having had an aneroid when we crossed the Kaz Bel, I can only guess at its elevation: Urumlu is about 4950 feet and Shahr (Comana) about 5000 feet above sea-level: the pass rises to fully 3000 feet above the latter, and the mountain north of it (Kozan Dagh) is quite 2000 feet higher still, *i.e.* about 10,000 feet. The mountains immediately west of Shahr (Dede Dagh and Elgeran Dagh), to judge by the amount of snow upon them in August 1890, and also in July 1891, must be higher than Kozan Dagh. They fall towards the Saros in tremendous precipices and form by far the most imposing part of the western range of Anti-Taurus.

The valley of the upper Saros which divides the western and eastern ranges is as striking a region as any in Asia Minor. Penned in between precipitous walls it lies apart from the rest of Cappadocia and possesses a character of its own; and it is easy to understand how it attained a mysterious sanctity in very ancient times, as the seat of the great goddess Ma, and preserved for so many centuries a worship alien to the Aryan population which had spread over the peninsula. At the present day it is the main stronghold of a singular nomadic race, the Avshar, who appear to have come from northern Persia and to have been forced

southward from Uzun Yaila by Circassian immigrants not many years ago. The allegiance which they profess to the God of Islam and to the Sultan is equally dubious: like the Kurds of the eastern Taurus they are idolaters and offerers of sacrifice, and defy alike the conscription and the tobacco laws. The Turks of the western plains shake their heads at the name of Avshar, whom they hold devil-worshippers and broken men, but, nevertheless, we found them hospitable, intelligent, and trustworthy. The women, as in Kurd villages, mix and talk freely with the men, and seem more intelligent and spirited than true Moslem women; they hardly veil themselves at all even in the presence of infidels. Both sexes wear brilliant colours, bright blues and reds, and the women adorn their heads with large yellow kerchiefs and the long pendent plaits of their hair with a profusion of gold coins. The plaits are thin and numerous, and are strung upon transverse sticks, which serve to keep them apart and away from the wearer's shoulders and face: in fact, they serve much the same purpose as combs in western *coiffure*. Both sexes are well built and handsome. Certain of these Avshar migrate in winter to the plains south of Taurus where Mr. Bent found them in 1890; the rest remain in the villages. Nomadic habits are still strong even with the most settled of these people: the inhabitants of Kemer, 5225 feet above sea level, situated near abundant springs and in the midst of rich grass, remove two or three miles away to *yaila* during the summer months, and we found the inhabitants of Koiyere and Yalak encamped not 200 yards from their own doors.

The valley varies in width from about four miles at Koiyere and Kemer to hardly half a mile at Shahr: between the first and last-named places, which are 12 miles apart, the fall of the Saros is about 1000 feet; its flow is sluggish and its banks and bottom soft at first, but it soon becomes rapid and the bed more rocky. Near Kemer the river turns westward, and as the Bimboa Dagh maintains its southerly direction, a great bay of rolling plain opens south of the river, through which the road to Gyuksun takes its way. The stream begins presently to cut its way deeper into the plateau, and flows for some distance beyond Shahr through a very narrow gorge: an interval of open country dotted with villages, Circassian, Turkman, and Armenian, succeeds, and then the river plunges into the Taurus and flows down a *cañon* whose sides are more than 1000 feet high, to the point where we crossed it below Hajin (see p. 659). From Shahr to that bridge is about 40 miles, and the fall of the Saros in that distance is 2570 feet. Shahr, the modern representative of Golden Comana, is the chief place, from an administrative point of view, in the valley: it is a miserable Armenian village of 100 houses, about twenty-five years old, built among the ruins of the old city, of which a theatre, fragments of a bath, part of a temple (now a church) and numerous walls, and doorways, are

above ground: more lies beneath, to judge by the hillocky appearance of the soil at the bottom and on the right of the valley.

The eastern wall, formed by Bimboa Dagh, is impassable at any point for beasts of burden or wheel-traffic, and the traveller who wishes to reach the country east of Anti-Taurus must double either the northern or southern end of the range, whose snow-streaked cliffs rise to 9000 feet on the farther side of the Saros. The northern route ascends from Koiyere in one hour to a high rolling plateau which stretches northward and eastward of Bimboa Dagh: at first the country is park-like, but the trees become gradually more sparse and cease almost entirely east of the Khurman Su, whose deep valley is the only notable feature on the road to Gyurun. The track is naturally smooth and easy, and requires little assistance from man: for the most part it ascends gentle acclivities out of one river basin and descends gentle declivities into another—from the Saros valley into that of the Khurman Su which flows to the Jihan, and from the latter to the head waters of a stream flowing to the Tokhma Su, and eventually to the Euphrates. Thus, near the village of Bash Uren no less important a watershed is crossed than that between the Mediterranean and the Persian Gulf.

The Avshar villages cease as soon as the eastern plateau is reached and the Akja Kurds begin. The latter, however, do not monopolise this region, for many villages either partly or wholly Armenian are met with, especially on the upper waters of the Tokhma Su, where they were founded in the eleventh century, when the Armenians migrated in great numbers from Greater Armenia towards the west and south. Circassians also have strayed southwards from Uzun Yaila and inhabit a few villages north of the Gyurun road: and there is a sprinkling of nondescripts who call themselves Turks and are probably Turkmans, inhabiting one or two villages east of Gyurun, *e.g.* Kizil Gyurun, and many in the valley of the Tokhma Su and the depression between Derende and Albistan.

The Kurds,* who are found in such numbers in the triangle of which Malatia is the apex, and the Tokhma Su, the Taurus, and Bimboa Dagh the sides, are for the most part orthodox Sunni Musulmans (at least in name), whereas the Kurds who possess the mountains east of Sivas from Divrik to Shabhan Kara Hissar are Shiite, and included by the Turks with other heretics under the generic term of contempt, *Kizil-bash.* The last-named Kurds have retained their tribal organisation more completely than their congeners south of the Tokhma Su, and are regarded as more intractable and dangerous. Not that much good has ever been said of the Anti-Taurus Kurds: Sterrett calls those settled between Arga and the Tokhma Su "an inhospitable, murderous set of filthy villains";

* See Ainsworth's account of these Kurds, 'Travels,' vol. i. p. 249.

and all the Turkish villagers in the Anti-Taurus give their Kurdish neighbours a bad name. For our own part, we experienced both in 1890 and 1891 more spontaneous hospitality at their hands than at those of any Turk, and were always delighted with the courtesy, intelligence, and fair dealing of our hosts. We have slept in their houses, camped near their villages or among their tents, and been dependent on them for food for many days: it is true that on one occasion they attacked one of our servants when separated from us, and I have heard a *bey* stigmatise his own tribesmen as "thieves to a man"; but, on the whole, our experience has been that they trust and delight to honour a European who treats them courteously, does not allow his guards (if he has any) to hector or rob them, and is not accompanied by their pet aversion, a Circassian.

They retain, indeed, some measure of tribal organisation, for almost every village is ruled by its own *agha* or *bey*, and they are essentially nomadic in their habits. Owing to the great elevation of their plateaux, on which snow lies for five months or more, their houses are generally either sunk many feet below the level of the ground, or, where the rock is soft, hollowed out in the hill-sides. It is not until a night is spent in one of their houses that the traveller discovers that what appears to be a little group of small log-huts on a slope is really a veritable ant-hill.

A few villages of true *Kizil-bash* Kurds undoubtedly exist in this district, shunned and despised by their neighbours: Kara Kuyu, about eight miles west of Gyurun, is an instance; and we noticed exceedingly unorthodox traits in the religious beliefs of Kurds in the valley of the Gyuk Su and on the southern slope of Taurus above Marash. The former set up wooden crosses over new graves, and tie three rag dolls to the cross-bar to receive the spirit of the deceased person. One of these dolls I secured, and have presented to the Pitt-Rivers Collection in Oxford. The latter certainly offer animals and fruits on stone altars, and their *hojas* are priests of a more primitive faith than Islam.

The northern route forks at Urtulu, one road going by the valley of the Khurman Su to Yarpuz and Albistan (this was traversed by Sterrett *), the other continuing due east to Gyurun. We followed the latter, and I give rough estimates of the mileage along it from the Saros:—

— Koiyere.	18 Khurman Su at Akdere *yaila* (Kurd).
1½ Koiyere yaila.	22 Bash Uren (Kurd and Armenian).
3 Edge of plateau.	29 Watershed of Tokhma Su valley.
5 Porrot (Kurd).	32 Kara Kuyu (Kizilbash Kurd).
8 Urtulu (Kurd).	34 Kizil Gyurun (Turk).
12½ Bozuk (Kurd).	39 Gyurun, 4950 feet.
15 Watershed of Khurman valley.	

* 'Epigraph. Journey,' pp. 290 302 306.

Gyurun *—Ptolemy's Gauraina—is a clean, well-built town, extending, with its suburbs, about five miles down the narrow valley of the Tokhma Su, which descends to the town from the north through a very narrow gorge. The course of the river is marked for miles by gardens, whose beauty is enhanced by the treeless aridity of the neighbouring hills; the water-supply never fails, even in the hottest summer. The inhabitants are about 10,000 in number, mainly Armenians, but including a considerable moiety of Musulmans, orthodox and heretical. Owing to the proximity of Uzun Yaila, Circassian influence is predominant.

Two notable "Hittite" inscriptions, seen by Sir C. Wilson in 1879, are carved on the rock near the point where the Tokhma Su emerges from its narrow gorge. The triangle east of Bimboa Dagh is a land of the "Hittites," and must have been the seat of a remarkable civilisation in early times. At the Palanga *chiftik*, not far from Derende, we found, in 1891, an archaic statue with an incised "Hittite" legend running round it, and a small basaltic lion is built into a wall hard by: a few miles south two large lions, first seen by Von Vincke,† stand in a roadside cemetery, the site, perhaps, of a forgotten palace: and one of the most curious monuments of the "Hittite" class stood for long in a graveyard near Izgin, and has now been conveyed to Albistan, namely, a stone wedge about nine feet high, inscribed on all four sides. News has reached us lately of the discovery at Malatia of a monument of the same type with incised inscription; and, doubtless, the Kurdish mountains and the Euphrates valley will yield others when thoroughly explored.‡

The southern route leaves the river at Kemer, and passing through Yalak (where a road from Shahr comes in), rounds the southern end of the main chain of Bimboa Dagh, crossing a depression which separates the chain from the foot-hills of Taurus, and descends to Keklik Oglu, and thence through a Circassian district to the valley of the Gyuk Su. The river itself is reached at Gyuksun, the chief town of this district, in modern as in ancient times. It is a semi-troglodyte town of 300 dwellings, excavated for the most part in the soft rock of an isolated hill which rises out of the plain: twenty-eight of its families are Armenian Christians, the rest call themselves Turks, but vary little in type or

* Ainsworth, p. 239.

† Sterrett, by some confusion, ascribes the discovery of these lions to Von Moltke. The latter never mentions them in his 'Letters,' and Ritter quotes Von Vincke when he describes them.

‡ The "Hittite" monuments, found by us in the Anti-Taurus region in 1891, have been published in the 'Recueil des Travaux relatifs à la Philologie,' &c., edited by Prof. Maspéro, as a sequel to the paper on the Tyanean monuments, &c., published previously in that journal by Prof. Ramsay and myself.

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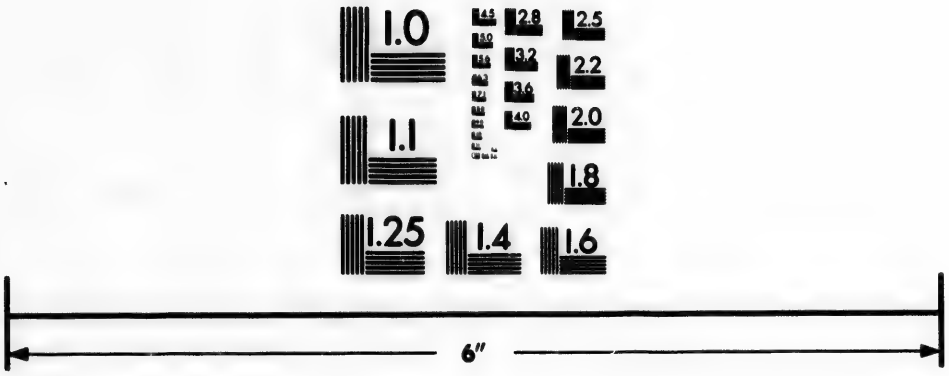

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habits from the Avshar and Kurds in their neighbourhood.* It is a miserable ant-hill of a town, out of the line of trade, and robbed of the fruits of its rich valley by the Circassians whom the Ottoman Government has allowed to settle about it.† The Circassian villages north of Gyuksun are the earliest settlements made by this race in the Anti-Taurus, and under the rule of three feudal beys, Mehemet, Mahmoud, and Tahar, prosper exceedingly and overawe the Turks and Christians, and even the local officials. Having stipulated for immunity from interference, these beys keep their tribesmen quiet and enjoy (comparatively speaking) a good reputation. East of Gyuksun, however, a large number of Circassian villages have been founded more recently, of which the principal is Funduk on the right bank of the Gyuk Su, for whose inhabitants no one, Musulman or Christian, has a good word; they beset the Albistan road, they rob the older Turkman and Kurd villages which occur at intervals on the left bank of the river, and murder with comparative impunity those who resist:—"Just a hard lot" was the verdict passed upon them by an American mission lady who has passed many years in travelling about this wild district. Their villages continue right down to the junction of the Gyuk Su with the Jihan, and they are in continual collision with the Zeitunli and Hajinli Armenians.

It would not be fair to say that the Ottoman Government makes no attempt to keep these unruly strangers in order—the fact that we found the prison at Albistan full of them proves the contrary—but no one can assert that with the small force at its disposal it can cope adequately with so large a body of tribesmen, strong, insubordinate, and resourceful. The Armenians themselves believe that these vigorous Musulmans have been imported to be a menace to themselves, and that much is overlooked on condition that they watch and harass the Zeitunlis. I do not know how far this is true, nor whether the Government is really cognisant of the outrages committed by Circassians. I only call attention to the fact that during the past twenty-five years very large bodies of Caucasian immigrants have been admitted into eastern Asia Minor, and distributed among the Armenians without any adequate provision being made for the restraining of their natural ferocity and predatory habits. Consequently every high road from the Gulf of Iskenderun to the Black Sea has become unsafe, and brigandage is carried even into the towns, as was shown recently by an outrage committed in the middle of Samsun, the chief port of the Black Sea littoral.

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* They are doubtless of the Turkman race who began to invade this part of the Taurus about the twelfth century; they were then a purely nomadic race, living in *yadlas* (Vaghram of Edessa, *l.c. supra*, p. 666).

† Gyuksun shows little nowadays of such civilisation as that seen by Tudebodius ('Hist. de Jer. Itin.' th. iv.), who calls it "quædam civitas nomine Coxon, in qua erat maxima ubertas, atque stipata omnibus bonis quæ nobis erant necessaria."

From Gyuksun two roads lead eastward, one by the south bank of the river direct to Albistan, the other to Yarpuz keeping some distance to the north of the Gyuk Su under the southern slope of a low range which, springing from the Bimboa Dagh, runs parallel with the Taurus as far as the Khurman Su, and encloses on the south the rolling plateau described above in connection with the northern road to Gyurun. The road crosses three affluents of the Gyuk Su, and continuing north-east (while the river bends rather south of east), crosses a low chain, the Atlas Dagh, into the valley of an affluent of the Khurman Su, at whose head-waters is situated Yarpuz, the ancient Arabissos, once important, but now robbed of all trade by Albistan,* 18 miles to the south-eastward. The inhabitants are true Turks with a few Armenians—one and all wretchedly poor and living in a collection of ill-built huts. I have seen no town or village in Asiatic Turkey wherein the conditions of life were less agreeable.

Some miles before reaching it, trees cease, and a bare, rolling country, all too familiar to travellers in central Cappadocia, stretches towards the horizon, relieved only by a distant prospect of the forests and snows of Beirut Dagh on the south, and the rank vegetation of the marsh in which the Sogutli Irmak, the Khurman Su, the Jihan, and the Gyuk Su meet. The most remarkable feature on the road is an immense source a mile west of Izgin, where a number of streams of icy water slide out from under arid rocks, and form a large pond, beside which nomads pitch their tents in summer; the pond discharges a large volume of water into the Khurman Su just before its junction with the Jihan, and like all the springs in this region, is full of small trout.

Albistan is situated on the Jihan itself about two miles below its main source, at the southern end of an extensive plain which contracts gradually to the northward, and forms a clearly marked depression between the western plateau of Bimboa Dagh, and the hills which divide the valleys of Jihan and Euphrates. The town is mainly Armenian, but strongly garrisoned as an outpost against Zeitun. Its 1500 houses are well built, and its *bazars* large and busy, but its development is hindered by the notorious unhealthiness of its situation, due doubtless to the neighbouring marsh.

The southern valleys of Anti-Taurus contain the most remarkable remains of a Roman military frontier road which exist in Asia Minor. The roadway is so well preserved, and the milestones so numerous, that

* Albistan is mentioned several times under the name of Ablastha by Armenian historians (*e.g.* Matthew of Edessa, p. 261, ed. Dulaurier), but not before the eleventh century. It was held by the Franks 1097–1105. In 1154 it was called the capital of Dchahan (Jihan), and was ceded by Kilij Arslan in 1161 to Yakub Arslan. (See Dulaurier, intr. p. xlv. Arm. vol. of 'Recueil des Hist. des Croisades'; and also Paul of Aleppo in 'Travels of Macarius,' p. 450.)

I have thought it worth while to subjoin to this paper a detailed account and map of the road in the valleys of the Saros and Gyuk Su.

The following table gives approximate distances and altitudes on the southern road from Shahr to Albistan.*

Miles.			Feet.		Deg. F.
—		SHAHR.			
5	..	Kemer (Avshar)	5560	24·50	61
8½	..	Yalak „	..	..	..
12½	..	Watershed of Gyuk Su	6569	23·65	..
13	..	Keklik Oglu (Kurd)	6215	23·95	..
17	..	Tahar Bei Koi (Circassian)	..	..	..
17½	..	Mahmud Bei Koi „ ..	..	..	..
20	..	Mehemet Bei Koi „ ..	..	..	..
24½	..	GYUKSUN (Turkman and Arm.)	..	..	..
39	..	Kanli Kavak (Turkman) ..	..	..	..
43½	..	Karaman Oglu „ ..	5028	24·90	48
48	..	Circassian village (new) ..	5375	24·75	..
57	..	YARPUZ (Turk and Arm.) ..	4865	25·20	80
66	..	Izgin (Turk)	..	..	..
75	..	ALBISTAN	4100 (?)	..	..

PART II.

THE MILITARY ROAD FROM CAESAREA TO MELITENE ON THE EUPHRATES.

By D. G. HOGARTH.

PROFESSOR W. M. RAMSAY states, in his 'Historical Geography of Asia Minor,'† that "the backbone of the Roman road system is the great road from Ephesus to the East," which Strabo ‡ describes on the authority of Artemidorus. Eastward of Caesarea, Strabo tells us briefly that it passed by "Herphae" to the Euphrates, and finally reached Tomisa; and we have to supply from modern exploration the exact course followed in the mountainous region of the Anti-Taurus.

Fortunately, however, this can be done, not because Artemidorus' κοινὴ ὁδός has been better preserved to the east of Caesarea than to the west, but because the last section of it was transformed into a great Roman military road, when Cappadocia had become a frontier province, looking across the Euphrates to the east, where Roman influence extended but a short way beyond the points of the legionaries' pikes. Armenia—a hotbed of intrigue and disturbance, even when nominally under Rome—and Parthia, the stronghold of the avowed rivals of the masters of the West, could either of them throw an army into Cappadocia at short notice; and, as soon as the emperors found that no scientific or assured

* The shortest road does not touch Kemer, but goes direct from Shahr to Yalak.

† Page 49. ‡ Page 663.

frontier was to be found farther east, the Euphrates was fortified with a line of standing camps, connected by military roads.

Much of this great line of defence needs further exploration before it can be adequately described; but one, and a most important, part of it, of which remarkable traces still exist, has now been partially explored, namely, the road which connected Melitene, the central point of the Euphrates lines, with Caesarea-Mazaca, ran under the northern face of the Taurus, and commanded the heads of the passes through its eastern ranges. The section of this road which lies between Caesarea and the Anti-Taurus has not yet been examined carefully by anyone trained to follow the line of an old highway; but it is probable that not much trace of it will be found in a district continuously inhabited and frequently cultivated. No sooner, however, does the traveller emerge from the Kuru Chai Pass into the valley of the Saros, than the old road appears visible to his eyes as a low embankment running over smooth and rough ground, now lost in a marsh or broken by a torrent's bed but soon found again; ruined bridges mark the points where it crossed the river; groups of milestones lie embedded by the track, or stand in wayside graveyards; and hardly a village in the valleys of the Saros or Gyuk Su does not possess some records of the Roman road-makers. The causes of the preservation of the road are to be sought in the character of the ground over which it runs—not near enough to the hills to suffer from landslips, or to the rivers to be washed by floods; and in the fact, which is patent (though its cause is obscure), that these valleys were never thickly inhabited, and indeed had been almost deserted for some time before the Kurds, Avshars, and Circassians, who now inhabit them, appeared upon the scene. The two races last mentioned have invaded this district within the past thirty years, the tenure of the Kurds (offshoots of the "Akja" Kurds, settled between Arga and Albistan,) is probably not older than the century, and there do not appear to be half a dozen villages in the Anti-Taurus of a date earlier than the advent of these peoples. To the possible causes of this paucity of inhabitants I shall recur later in dealing with the history of the road.

For more than 65 Roman miles, from the southern end of the Kuru Chai to the crossing of the Khurman Su at Izgin (see map), the old roadway can be traced with few interruptions, and its milestones read. It is lost for a time in the deep plain of the Jihan, but the clue may be picked up again in the valley of the Sogutli Irmak, which is crossed by a bridge, a solitary pier of which stands at Giaur Uren. It is said to become evident again near Arga, on the eastern side of the Kurdish hills, but we cannot speak of it there from personal observation.

We propose to describe, in the present article, the section from the Saros to the Sogutli Irmak. The milestones discovered upon it are perhaps the most perfect series known; and certainly of no Roman road

in Asia Minor of equal length is so much visible evidence in existence.* From this one section, so singularly preserved to our days, we can know how the most important military road in Asia was engineered, constructed, and repaired.

We may claim to be the first travellers who have traced the actual line of the road by its visible remains, and fixed the mile stations along it. Professor J. R. S. Sterrett followed its general course in 1884, and read a number of its milestones,† some having been discovered already by Mr. Clayton in 1881 and Professor W. M. Ramsay in 1882.‡ In 1890 the latter was still uncertain whether the road crossed to the Saros valley by the Yedi Oluk Pass or no; but he settled that point in the negative by traversing the defile itself and the upper Saros valley, and finding no trace of the road; while in the following year we found a bridge over the Saros at Kemer, which made assurance doubly sure that the road descended from the Kuru Chai. The notes on which the following paper is based were taken mainly in 1891; a few milestones are published from our discoveries in 1890.

A.—Description of the Road.

We take up the road at the point where it reaches the right bank of the Saros, after a long and tortuous descent from the defiles of the western range of Anti-Taurus, whose foot-hills rise abruptly from the river bank itself. The Kuru Chai, by which it crosses the mountains, is not a difficult pass: even at the present day wheeled vehicles can traverse it in spite of the fact that there is no made road; and it is reckoned distinctly easier than either of the principal defiles north or south—the Yedi Oluk and the Gez Bel—through both of which we took a light waggon in 1890. The western Anti-Taurus is a barrier far more formidable in appearance than reality: seen either from the west or east, its long serrated ridge, crowned by crags whose summits are from 9000 to 10,000 feet above sea-level, promises difficulties of no ordinary kind; but on a nearer approach to any of the three great passes, long valleys are found to lead by moderate gradients to low depressions in the main ridge, which close inspection shows to consist rather of small separate mountain groups than of one continuous chain—a fact recognised in the multiplicity of names, Kara Kilisse, Elgeran, Dede,

* The wonderful road from Olba to the Cilician coast is in more perfect preservation still, but it is not above 25 miles in length, so far as we could see in 1890. It is quite possible, however, that it could be traced for many miles north of Olba in the direction of Coropissus (Kestel).

† See his 'Epigraphical Journey in Asia Minor' (Papers of Amer. School at Athens, vol. ii.), pp. 240 *ff.*, and the Supplement to vol. iii. of the 'Corpus Inscr. Lat.,' part i. pp. 1252 *ff.*

‡ See 'Bulletin de Corr. Hellénique,' vii., pp. 144 *ff.*

Bei Dagh, and so forth—bestowed on the range by the modern inhabitants of the locality, in contrast to the unbroken chain east of the Saros, which bears but one title, Bimboa Dagh. The highest and steepest crags of the western range rise to the south of the Kuru Chai, behind the site of ancient Comana, forming a grand background to the view across the strait gorge in which lie the ruins of the holy city.

The exact point at which the Saros was crossed is still marked by the ruins of a Roman bridge at Kemer, a village of newly-settled Avshars. The river, though swift, is not deep here, and is fordable in summer: its width is not more than 25 feet, which the bridge used to cross in two spans. The arch abutting on the left bank remains almost intact, together with the approach from that side: it afforded a roadway 10 feet wide, and is built of large limestone blocks laid four abreast without mortar. Remains of a stone parapet appear in the approach, but all trace of it and of the roadway has vanished on the arch. A pier rests on a rock in mid-stream; on the right bank the abutment of the arch only remains. The level of the Saros at this point is 5560 feet above sea-level.

From the bridge the course of the road lies at first S.E., round the base of an isolated hill on the right. For some distance no sign of the roadway itself can be traced in the cultivated tract near the village; but two miles from the river the traveller begins to perceive a low embankment, running now on the right, now on the left of his track. Raised a few inches above the general level, it is further marked by the different colour of the herbage growing on its surface, and by the stones—remains of the *nucleus*—with which it is thickly strewn. Now and then larger "confining" blocks can be seen on either side at the edge of the embankment. The road runs along the bottom of the broad valley of an insignificant tributary of the Saros, a mile or two from the western base of the Bimboa Dagh, and for eight Roman miles lies in plain country, cultivated but recently in rare patches by the nomadic villagers of Yalak and Kara Kilisse. The line of the *agger* is consequently preserved with little interruption throughout this valley.

The graveyard of Kemer is full of Roman milestones, but none are *in situ*, although, as I shall try to prove later, a mile station, the 151st from Melitene, stood at or near the village, probably at one end of the bridge over the Saros. The first group which is unmistakably *in situ* * occurs two miles on, where, at a point on the right of the ancient track, we found six inscribed stones, lying almost wholly buried, and spent several hours in unearthing and deciphering them. Five bear the numeral 149 in Greek, or Greek and Latin, the remaining one being

* The 152nd group, six in number, was still *in situ* as late as 1882; but three of its stones had been removed before 1890.

a mere fragment. The stones on this section are all of rough limestone, rounded, about 7 feet high, and from 1 foot 3 inches to 1 foot 6 inches in diameter. They are generally shaped to a rude point at the top. About three feet of the stone were embedded in the soil, and the lettering begins close to the top, except in the case of certain stones of Septimius Severus, whose inscription was often arranged in long lines almost encircling the stone. The numeral, always most deeply cut, is usually divided by a clear space from the rest of the text; next to it in size and depth of cutting ranks the initial IMPCAES. As 80 per cent., however, of the stones on this road bear two inscriptions at least, one superscribed over the other, it is often difficult to determine how the original text was cut. Red pigment was doubtless used to throw up the lettering.*

The road-embankment (*agger*) is uniformly about 10 feet wide, and still slopes slightly towards the crown in the more perfect sections east of Kanli Kavak. It thus conforms to Vitruvius'† rule that the *agger* should have a *fastigium* . . . . *in pedes denos digitos binos.* The surface of the most perfect section which we saw was composed of small stones hammered down, and confined by larger lateral blocks;‡ underneath was a layer of rough boulders, large and small, probably the *nucleus* of Vitruvius, which, in the case of an elaborately-constructed road, was laid on a foundation of solid masonry (*statumen*), itself resting on a bed of some loose substance, such as straw. We nowhere saw any trace of this *statumen*, nor again of any upper pavement of flat blocks—the *summa crusta*—familiar to those who have seen remains of Roman roads in Italy or elsewhere.

"Flag" pavement is so commonly considered an essential part and token of a Roman road that a few words must be said about the probability of its having been laid originally on Severus' road. The fact that we never saw a single inch of such a pavement, even on sections where the *agger* is in almost perfect preservation, is no way conclusive that it never existed; for, if milestones have been carried nearly twenty miles from their stations to serve for modern headstones,§ *à fortiori* the small paving stones might have been stripped off entirely by peasants in want of building material. Villages, though not numerous in the valleys of the Saros and Gyuk Su, are still not insufficient, when combined with the towns of Gyuksun and Albistan, to account for the total disappearance of an upper pavement.

The fact, however, that the surface is perfectly "dressed" at the

* On a milestone of Hadrian, found by us at Ashkhar, on the road from Sebastea to Nicopolis, the red pigment is now as bright in the letters as the day it was first applied.

† vii. i.

‡ "*Margines*," cf. Livy, xli. 27.

§ *E.g.* from near Yalak to Gyuksun, see 141 i., *infra*.

present day between the confining *margines*, and shows no trace of having carried an upper layer, distinctly suggests that the road was "macadamised;" in fact, coated with *glarea*, not *silex* or *lapis*. That many Roman roads, more especially outside the towns, were so finished, appears from several passages in ancient authors, notably Livy, xli., 27, who says of the censors, Q. Fulvius Flaccus and A. Post. Albinus, that they were the first to put out to contract *vias sternendas silice in urbe, glarea extra urbem substruendas marginandasque.* Ulpian * draws a similar distinction in speaking of *viae terrenae*, or mere cross tracks. It is unlawful, he says, *in viam terrenam glaream injicere: aut sternere viam lapide quae terrena sit, vel contra lapide stratam terrenam facere;* and Tibullus † mentions both kinds of roadway in Etruria:—

> "*Namque opibus congesta tuis hic glarea dura*
> *Sternitur, hic apta jungitur arte silex.*"

The roads paved with *silex* were naturally those least easily destroyed, and therefore are observed most often nowadays. The above passages, however, prove the existence of an inferior system of paving, and it must be allowed that the present condition of Severus' road suggests that (thanks to the deserted state in which the Anti-Taurus valleys have been for a long period) a rare instance of an *agger* paved with *glarea* has been preserved to us.

Two more milestone groups were passed on the right of the track before the village of Yalak is reached. A group stood in or near the village itself, represented by two stones in the graveyard. The villagers are Avshars, not long arrived in the district, and prone, after the manner of their race, to mark graves with upright poles or chunks of timber rather than stones. The rapid disappearance of the forests, however, will soon effect a change in this usage. Continuing its course southwards, the ancient road gradually approaches the eastern range, beginning to rise perceptibly, until after four miles it bends south-eastward, and zigzags up to the summit of a low pass, which intervenes between the southern end of Bimboa Dagh and the rough hills, which trend away south-westward to the Saros. This is the watershed between the latter river and the basin of the Jihan. The summit crossed is 6570 feet above sea-level, and the Bimboa Dagh rises fully 3000 feet more on the left. In the pass, and for several miles beyond it, the old track is conspicuous. It appears as a "dyke" of loose stones, from which all "dressing" has disappeared, and at a point two miles south of Keklik Oglu, where broken country has to be crossed, it becomes a very

* Digest, xliii. 11. '*De via publ. et itin. publ. reficiendo.*'

† Eleg. i. 7, 59. I owe these quotations to Bergier's somewhat prolix monograph published in 1665—'Histoire des Grands Chemins de l'Empire Romaine,' vol. i. pp. 246, etc.

considerable embankment from two to four or five feet high. Milestone groups *in situ*—the 137th and 136th—occur at, and a mile beyond, the Kurdish hamlet of Keklik Oglu, a troglodyte settlement of dwellings mainly hollowed out of soft rock, and furnished with wooden porches.

The fall to the valley of the Gyuk Su is more rapid than the ascent from the Saros, and consequently gullies and broken country are encountered more frequently. Owing, probably, to this fact, we lost all trace of the road for many miles from a point three miles south of Keklik Oglu, with the exception of a doubtful section near Mehemet Bei Koi. About its general direction, however, between the rough hills which enclose the stream flowing down from the pass, nature has left no possibility of doubt. From this part of the road the milestones have been carried in large numbers to Gyuksun, one of the oldest settlements in this district, and we found very few on the road. A highly crystallised, but not durable, limestone is found in this neighbourhood, and the stones made of it are of less diameter than those of coarser material. They have the double disadvantage of being less deeply inscribed owing to their original hardness, and of having rotted on the surface, to counterbalance the doubtful advantage of a somewhat more finished appearance.

In the deep marshy plain of Gyuksun no trace of the roadway is to be expected. The three cemeteries of the town contain nearly a score of milestones, most of which, to judge by their weathered appearance, have stood there for centuries. The town—anciently Cocusus—stands at or near the 126th station. It is a semi-troglodyte settlement, hollowed out of an isolated hill, and inhabited by a dark race, who dress like Avshars, but call themselves Turks. The majority are probably Turkmans.* Mixed with them now are many Circassians, and a few Armenians, the latter numbering twenty-eight as against about three hundred Moslem families. The place is a petty administrative centre, the seat of a *mudir*, and has a small and ill-supplied *bazar*. To judge by numerous fragments of cornice and mouldings in the cemeteries and houses, it was anciently a well-built town.† Several inscriptions of the Byzantine period have been published by Sterrett, and we copied a few more in 1891.

Cocusus is the most southerly point touched by the road. Thence it turns E.N.E. down the Gyuk Su, keeping high up on the slopes left of the stream, which flows on the right side of its valley close under the rugged foot-hills of the Taurus. The fine views of the great mountain wall, especially of the snowy cliffs of Beirut Dagh, and the broken wooded valley, make the section from Gyuksun to Yarpuz the most picturesque part of the road.

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* See *infra*, p. 718. The Avshars themselves, it must be remarked, are a "Turkish" race.

† *E.g.* in 1097 (*cf.* the account quoted, *supra*, p. 676, and *infra*, p. 718).

For ten miles after leaving Gyuksun the traveller will look in vain for the ancient roadway, for the Gyuksunlis and the Circassians, lately settled in villages on the right of the road, have cultivated all this part of the valley and obliterated the track. Possibly in autumn its line might be traced here and there: we passed in summer, when the corn was standing thick and high. Three groups of milestones, however, will be found at 40 min., 1 hr. 5 min., and 1 hr. 40 min. respectively from Gyuksun.* It is impossible to be sure that any of these stones are *in situ*, for, unlike the groups between Kemer and Yalak, they stand in modern roadside graveyards. It is very probable, however, that the graveyards (near which no traces of villages exist) have grown up round the groups, the peasants being attracted by the mysterious sanctity of old "written stones" or simply by the convenience of having headstones ready to their hand. The great weight of the stones would dispose them to carry the dead to the stone rather than the stone to the dead. Once a graveyard has been formed, then other stones are brought from a distance. The transportation, however, of these stones over long distances is so common † that it is not safe to assert positively that the graveyards between Gyuksun and Kanli Kavak were formed round milestone groups, without more accurate measurements of distance than the pace of a horse or native reckoning by hours afford. At a rough estimate these cemeteries are not far from the 124th, 123rd, and 121st stations respectively; but it is impossible to be more precise.

The 118th station was almost certainly where the cemetery of Kanli Kavak is situated now. It formed the nucleus round which the peasants of the village, a mile to the north, began to bury and collect other stones from all sides, till over twenty-five milestones stand at this day, proclaiming the names and titles of Roman emperors over nameless Turkman dead.

The valley, which so far has been open and cultivated, now becomes narrow, and often broken by gullies running down to the Gyuk Su. The ancient road runs about half a mile to the north of the modern track for more than three miles, passing a cemetery full of stones from the 115th station. Close to the 114th (whose stones are *in situ* near a Circassian hamlet in the Dunyat Bel) it rejoins the modern horse-road, and is once more plainly visible. The 113th station is almost wholly buried by earth-slips, but one stone remains—the last we were to find until we reached Yarpuz.

Crossing a considerable stream, the traveller enters broken, pine-clad foot-hills, on whose slopes the old road can be seen more plainly than anywhere else. In the ease of its gradients, the bluntness of its curves,

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* See Sterrett, *l.c.*

† *E.g.* at Gyuksun there is a stone from the 141st station which has been conveyed 15 miles; and apparently one has been carried from the 58th station to Albistan, about 25 miles.

and the condition of its surface (though unpaved), it is far superior to the modern track beside it, and if cleared of brushwood, would make an *araba* road without further expenditure of labour, except in a few places where torrents have cut through it. After a course of five or six miles over the foot-hills the road emerges on a bare plateau, over which, still plainly visible at intervals, it runs towards Yarpuz, and is lost at last in the sharp descent to the town itself.

A stone from the 100th station was found by Sterrett at Ziyaret Serai, a village some distance north of the road, and three miles west of Yarpuz; but neither he nor we could discover what had become of the rest of the stones from sixteen stations. Some are doubtless buried under earth-slips or silt; more, perhaps, were carried long ago to Yarpuz and built into walls. Only two are to be seen in the cemetery there, and we searched diligently but unsuccessfully for others in the houses and courtyards.

Yarpuz—anciently Arabissus—now a mean little town, inhabited by a few Armenians and many Turkish families of old standing, was formerly the most important place on the road between Caesarea and the Euphrates—an importance to which nothing but a few Byzantine epitaphs and mouldings remain to testify. Here a great road from Sebastea, and an alternative route *viâ* Ptanadaris from Ariarathia and Caesarea, joined the main artery, while the road into the great pass of the Jihan turned off southwards a few miles to the east, and was controlled from Arabissus.

From Arabissus the road bends S.E. for four miles, turning again E.N.E. at a point marked by a small graveyard, in which stand three milestones, probably part of or brought from the 94th station. For three miles beyond this point the old roadway, lost since Arabissus, can be seen once more on the left of the modern track. It runs down a stony treeless valley towards the plain of Albistan, and a mile west of Izgin skirts the head of a great spring or group of springs, which well out from under limestone hillocks and collect into a large pond before flowing to the Khurman Su.

All trace of the ancient roadway is lost finally before Izgin is reached. In the deep marsh which fringes the Jihan it has probably long ago sunk many feet down, nor should we have succeeded in picking it up on the eastern side of the plain but for the ruins of a bridge over the Sogutli Irmak at Giaur Uren. These consist only of the rubble core of a pier on the right bank, and traces of an abutment on the left. Perhaps the 76th station stood at the bridge. At Demirjilik, two miles down the stream, are two milestones, both illegible, and ten at least have been conveyed to Albistan, but one and all deliberately, though not quite successfully, defaced.

We spent a whole day trying to pick up the clue again beyond Giaur Uren, but failed. The bare hills are crossed nowadays only

by sheep-tracks, and there is nothing to induce the traveller to prefer one naked valley to another. None but a few nomad Kurds, ill-acquainted with the district, roam here in summer; and we could extract no information from them. The existence, however, of the bridge at Giaur Uren proves that Prof. W. M. Ramsay was right ('Hist. Geog. of A. M.,' p. 273) in concluding that the road took the direct line by the Sogutli Irmak valley to Arga, and not the more southerly modern route from Albistan to Malatia, on which Sterrett failed to find any ancient traces.* The track followed by Major Bennett † due east over the Kurdish hills is now completely disused, but no doubt represented until recent times the last section of the Roman road to the Euphrates.

There must have been a bridge over the Khurman Su east of Izgin, but we saw no trace of it.‡ Except at Gyuksun and Yarpuz there are hardly any signs of an ancient site on the road; even at Kemer, which Professor Ramsay identifies with Sirica, there is hardly anything remaining. Osdara and Dandaxina, the other stations recorded between the Khurman Su and the Euphrates, either were further east than our journey extended (as Prof. Ramsay places them) or have disappeared. At a site called Seraijik, about five miles south of the road, at the entrance to the defile which conducts from Gyuksun to Marash, is a graveyard full of Byzantine remains—perhaps those of Callipolis, passed by Basil in 880 on his march from Cocusus to Germanicia—and numerous Byzantine (or Armenian) mouldings, columns, etc., exist at Buyuk Yapalak, north of Albistan, and about six miles off the line of the road. The situation seems too remote from the direct route to be that of Osdara, and no other Byzantine town is recorded as having been situated in this district.

B.—The Milestones.

The mile stations on the map appended have been determined by the position of certain groups found *in situ*. These are the 152nd, 149th, 148th, and 147th, at all of which the stones lie by the roadside at the proper mile intervals, and not in cemeteries; also the 136th, to which the same description applies; the 115th, which, though in a cemetery, is proved to be practically *in situ* by the recurrence of the same numeral; the 114th and 113th, which still lie beside the road. These are fixed

* 'Epigraph. Journey,' p. 298. It is perhaps worth recording that an old Albistan *zabtieh* asserted to me that a paved road existed a short distance west of Arga.

† 'Hist. Geog.,' p. 273.

‡ The modern track, however, making for Albistan, probably runs a good deal to the south of the ancient, and the old bridge should be looked for higher up the stream than Izgin.

points from which inferences can be drawn safely, and thus we reckon that such stones in the cemetery at Kemer as bear the numeral 151 have been moved a few yards only; those in the cemetery at Yalak are from the neighbouring 146th station; those at Keklik Oglu from the 137th, which must have been in the modern village; those at Kanli Kavak have been collected round the original group of the 118th station. The question of road-side cemeteries has been discussed above: if it is conceded that they have grown up round pre-existent groups, then representatives of the 131st, 124th, 123rd, 121st, and 94th stations are probably *in situ*.

The shape, size, material, and style of cutting have been described above. The numerals are reckoned from Melitene, the *caput viae*, near the left bank of the Euphrates, where Legio XII. Fulminata was stationed. Modern Malatia is not very near the Euphrates, but the older town, deserted in 1840, is much nearer to the river bank.*

The stones, up to the present moment found and deciphered, belong to the reigns of ten emperors, ranging from Septimius Severus to Diocletian and Maximian. A great number of stones bear no numeral —a fact about which mistake is not likely to occur, as that part of an inscription is most deeply cut, and therefore best preserved. A considerable number of stones are not inscribed at all, and a very large proportion have been used twice or thrice, to the sorrow of the modern epigraphist. On the whole, most respect has been shown by subsequent lapicides to the stones set up by Septimius Severus. Of later emperors, Gordian and Philip seem to have used most new stones, or to have had previous inscriptions most thoroughly erased. The last of the series, Diocletian and Maximian, never use a new stone, and their inscriptions are the most inextricably mixed up with earlier ones.

The formulæ are generally as follows:—

1. *Septimius Severus.*

Imp. Caes. L. Septimius Severus Pius Pertinax Aug. Arab. Adiab. Parth. Max. pont. max. trib. pot. vi. imp. xi. cos. ii. p. p. procos, et Imp. Caes. M. Aurel. Antoninus Aug. [et P. Septimius Geta] restituerunt per G. Julium Flaccum Aelianum leg. pr. pr.

2. *Elagabalus.*

Imp. Caes. divi Severi nep. divi M. Antonini fil. M. Aur. Antonino pio felici aug. milia restituta per M. Ulp. Ofellium Theodorum leg. aug. pr. pr.

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* See Sterrett, 'Epigraph. Journey,' p. 301; and for a good description of the town at the epoch of the migration, Ainsworth, vol. i., p. 255.

3. *Severus Alexander* (twice only).

Imp. Caesar M. Aurelius Severus Alexander pius felix aug. trib. pot. cos. p. p. vias et pontes vetustate conlapsas restituit.

4. *Maximin.*

Imp. Caes. Gaio Julio Vero Maximino pio felici invicto aug. p. m. trib. potest. p. p. per Licinnium Serenianum leg. aug. pr. pr.

5. *Gordian III.* (Names of *Balbinus* and *Pupienus* erased.)

Imp. Caesari Marco Antonio Gordiano pio felici augusto restituerunt (*sic*) per Cuspidium Flaminium Severum legatum propraetorem.*

6. *Philip.*

Imp. Caesar Marcus Jul. Philippus pius felix invictus aug. et Marcus Julius Philippus nobilissimus Caesar vias et pontes vetustate conlapsas restituerunt per Antonium Memmium Hieronem leg. augg. pr. pr.

7. *Decius* (once only).

Imp. Caes. Trajano Decio aug. et Q. Herennio Etrusco Maesio Decio et G. Valenti Ostiliano Mesio Quinto nobill. Caess. . . . .

8. *Gallus and Volusianus.*

Imp. Caesar G. Vivius Trebonius Gallus et Imp. Caesar G. Vivius Velduminianus Volusianus pii felic. invicti augg. vias et pontes vetustate conlapsas restituerunt per A. Virgilium Maximum v. c. leg. augg. pr. pr.

9. *Aurelian* (once only).†

Imp. Caes. L. Domitio Aureliano pio felici invicto aug. trib. pot. cos. p. p. vias et pontes vettustate conlapsas restituit (*sic*).‡

10. *Diocletian and Maximian.*

Impp. CC. Gaio Val. Diocletiano et M. Aur. Val. Maximiano pp. ff. invi. augg. et Flavio Val. Constantio et Gaio Val. Maximiano nobb. Caess.

The following catalogue of milestones includes all known at present

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* See, however, **152**, iii., *infra*, for a variation due to more thorough change of the formula of Balbinus and Pupienus.

† See note, p. 699, *infra*.

‡ In this formula (if correctly copied), as in that of Gordian (owing to the erasure of the names of Balbinus and Pupienus), there is a confusion between "Imperator . . . restituit" and "Imperatori . . . milia restituta," used by Elagabalus, Maximin, Decius (?), and Diocletian. Probably Aurelian's inscription was fitted into an older one, and thus an ungrammatical formula has resulted.

on this section of the road. Those known previous to 1890 are all in the 'C. I. L.' (suppl. to vol. iii. pp. 1252 *ff.*), and I simply give a reference to them. Several found by us were so hopelessly superscribed as to be beyond reproduction by any process but photography; and in many cases we contented ourselves with discovering what emperors the entangled formulæ represented, without spending hours on completely unravelling the inscription. In such cases we merely bracket the emperors' names; but all other milestones previously unpublished we give in full. As far as may be we have arranged them by the stations to which they belong; but a large proportion which are not *in situ*, and bear no legible numeral, cannot be referred to certain positions. We follow the road from west to east, as in the description given above.*

153.

(i.) 'C. I. L.,' 6952.
Maximin. P N Γ
(?) (ii.) 'C. I. L.,' 6950.
Sept. Severus.

It is certain that these two were brought at the same time from the same place for a single purpose.

152.

(i.) 'C. I. L.,' 6955.
{Philip. P N B.
{Diocletian.

The description which Professor Ramsay gave of the milestones which he copied in 1882 is too vague to be of any use. The hurry of his journey across an unmapped country (one day crossing the mountains to Comana, one day in Comana, one day from Comana to Azizie) gave him no clear idea of the geography. Only in 1890 he found out that Nos. i. and ii. were found in the Kuru Chai Pass. He stayed behind the rest of the party to examine the group of milestones at the 152nd mile, but before he had nearly finished, a violent thunderstorm forced him to take refuge in the Avshar village, Mollah Oglu, at the entrance to the Kuru Chai. His guide then conducted him by a track across the hills to join Sir C. Wilson, who had taken the Kabak Tepe Pass. Accordingly, 'C. I. L.,' 6950 and 6952, which were found in this village inside a house, forming the posts on each side of the fireplace, must be very near their original position at the southern end of the Kuru Chai Pass.

'C. I. L.,' 6953, 6954, 6955, were all *in situ* in the year 1882, along with three others; 6953 and 6955 are still in the same place; 6954

* In the case of stones not copied in 1891, I have indicated the copyist by initials (R. = Ramsay: H. = Hogarth).

has been brought to the graveyard at Kemer. The violent storm obliged Professor Ramsay to leave in 1882, almost immediately after he had begun to copy them, and before he had succeeded in deciphering any of them completely. The branch road to Comana diverged from the main road at this point. The total distance, Melitene to Comana, was probably 152 + 4 = 156. The distance, 151, given in 'Hist. Geog. A. M.,' p. 274, from Melitene to Kemer is right. The distance, six from Kemer to Comana, is one too many.

(ii.) R. 1890. In the cemetery at Kemer: formerly one mile away *in situ* by the Shahr road, where R. copied it in 1882. *Vide* 'B. C. H.,' vii., p. 144; 'C. I. L.,' 6954.

IMPCAES	Imp[erator] Caes-
A.MAVR	a[r] M. Aur-
ELIVSSEVER	elius Sever[us
ALEXAND	Alexand-
ERPIVSFELIX	er pius felix
AUG ∫ TRIB..	aug. trib. [po-
TEST ∫ COS ∫ PP	test. cos. p. p.
∫ VIA.ETPO	via[s] et po-
.TESVETOSTA	n]tes vetosta-
TECONLAPSA	te conlapsa-
SRESTITVT	s restitu[i]t.
PNB	PNB.

(iii.) R. 1890. *In situ* one mile from Kemer, on the road to Shahr. 'C. I. L.,' 6953.

IMP	Imp[erator]
CAESAR	Caesar
[Six lines erased.]	[Names of Pupienus and Balbinus erased.]
MANTONIVS	M. Antonius
DIANVSNOBILISIMVS	Gor]dianus nobilis(s)imus
AESARRESTITVIT	C]aesar restituit
PERCVSPIDIVMPIAN	per Cuspidium [Fl]a[m]-
VMSEVERVMLEG	ini]um Severum leg-
OPRETOREM	atum pr]opretorem
....MP	M. P. (PNB)

151.

(i.) R. 1890. H. 1891. } In the cemetery at Kemer.

IMPCAES	Imp[erator] Caes[ar]
LSEPTIMIVS	L. Septimius
SEVERVSPIVS	Severus Pius
PERTINAXAVG	Pertinax Aug[ustus]
ARABADIABPA	Arab[icus] Adiab[enicus] Pa-
RTHMAXPONT	rth[icus] Max[imus] pont[ifex]
MAXTRIBPOTVI	max[imus] trib[unicias] pot[estatis] vi
IMPXICOSIIPP	imp[erator] xi cos. ii p[ater] p[atriae]
PROCOSETIMP	procos: et Imp[erator]
CAESMAVREL	Caes[ar] M. Aurel[ius]
ANTONINVSAVGET	Antoninus Aug[ustus] et
[Erasure.]	.....
..RESTITVERVNT	.. restituerunt
PERCIVLIVMFLAC	per G. Julium Flac-
CVMAELIANVM	cum Aelianum
LE.....PR.PR.....	le[gatum] pr[o] pr[aetore]
CLI.PNA.	CLI.PNA.

(ii.) R. 1890. In the cemetery at Kemer, upside down, fragmentary.

CLI PNA

(iii.) Newly excavated on the hillside, min. from Kemer, right of the path to Shahr. Very rudely and irregularly inscribed.

IMP.....	Imp. [Caesar
....VS.....	Marc]us [Jul. Phil-
...USPIUS.....	ipp]us pius [felix
INVICTVSAVG	invictus aug.
.....IUS	et Marcus Jul]ius
.....SSI...	Philippus nobili]ssi[mus
.....A.E.PONT.S	Caesar vi]a[s] e[t] pont[e]s
V.....ATE...	v[etust]ate [con-
LAPSASRESTITU	lapsas restitu[erunt
.....	[per Antonium Memmium]
....ONE.LE....	Hier]one[m] le[g. aug.
.....TO...	proprae]to[rem.

150.

R.} 1890. In the cemetery at Kemer.
H.}

IMPCAES	Imp. Caes.
SEPTIMIVS	L.] Septimius
SEVERVSPIVS	Severus Pius
PERTINAXAVG	Pertinax Aug.
ARABADIABPARTH	Arab. Adiab. Parth.
....PONTMAX	Max.] pont. max.
TRIBPOTVIIMPXI	trib. pot. vi. imp. xi.
....IPPPROCOS	cos. i]i p. p. procos.
ETIMPCAESMAVR	et Imp. Caes. M. Aur.
ANTONINVSAVG	Antoninus Aug.
[Erasure.]	.....
[Erasure.]	.....
RESTIT	restit-
VERVNT	uerunt
PERCIVLIVM	per G. Julium
FLACCVMAELI	Flaccum Aeli-
.NVMLEPR..	a]num le. pr. [pr.
CL PN	CL PN.

149.

(i.) By the roadside, 27 min. from Kemer, towards Yalak.

IMPCAL	Imp. Ca[esar
LSEPTIMIV	L. Septimiu[s
SEVERVSPIVS	Severus Pius
PERTINAXAVG	Pertinax Aug.
ARABADIABPARTH	Arab. Adiab. Parth.
MAXPONTMAX	Max. pont. max.
TRIBPOTVI.IMPVI	trib. pot. vi. imp. [x]i
COSIIPP.PROCOS	cos. ii. p. p. procos.
ETIMP.CAES	et Imp. Caes.
MAVRELANTON	M. Aurel. Anton-
..VSAVG.....	[in]us Aug .....
.....RESTIT	..... restit-
VERVNTPERIVLFLAC	uerunt per [G.] Jul. Flac-
CVMAELIANVM	cum Aelianum
LE.PR.PR	le. pr. pr.
CXLIXPM⊙	CXLIXPM⊙

149—*continued.*

(ii.)

IMPER	Imper.
CAESARMARC	Caesar[i] Marc-
OANTONIOCO	o Antonio Go-
RΔIANOPIOFE	rdiano pio fe[l-
ICIAVGVSTORESTI	ici Augusto resti-
TVERVNTPER	tuerunt per
CVSPIΔIVMFLA	Cuspidium Fla-
MINIVMSEV	minium Sev-
ERVMLEGATV	erum legatu-
MPROPRAET	m propraet-
OREM	orem
CXLIX	CXLIX
PM⊙	PM⊙.

(iii.) [Imp. Caesar M. Julius Philippus pius felix invictus aug. et M. Julius Philippus nobilissimus]

ES VIA	Ca]es[ar] via[s et
NTESVI	po]ntes v[et-
AT.CONLA.	ust]at[e] conla[p-
....ESTITVE	sas r]estitue-
PERANT	runt] per Ant-
VMMEMM	oni]um Memm-
IVMHIERONEM	ium Hieronem
LEGAVG	leg. Aug.
PR PR	pr. pr.
PM⊙	PM⊙.

(iv.)

IVG
IB
IMPCAES
RESTITVERVNT
CAIOVAL
ΔIOCLETIAO
IAN

This fragment bears part of two inscriptions; the upper one has been imperfectly erased, and *restituerunt* has remained. The lower one is

Imp. Caes.
Gaio Val.
Diocletia[n]o
.....

149—*continued.*

(v.) IMPCA S	Imp. Ca[e]s.
USSEPT M	
AIAMOA PIOA	Tr]aia(n)o (D)[e](c)io a[ug.
VER	
ENNIOA	et Q. Her]ennio [Et-
CCOMAESI	ru](s)co Maesi-
CAESICETIMP	(o D)e(c)i(o) et (G.)
ENTIOSTIOS	Val]enti Osti(li)-
NOMESIO	a]no Mesio
INTONO	Qu]into no-
BILLCAESS	bill. Caess.
PM⊙	PM⊙.

The inscription of Decius has been superscribed upon one of Septimius Severus.*

(vi.) Bears numeral CXLIX PM⊙. The stone is fragmentary, and the inscription is in hopeless confusion, out of which nothing intelligible can be made.

148.

Two stones *in situ*, which we had not time to dig out.

147.

By the roadside, 52 min. from Kemer towards Yalak, lying face downwards beside another milestone.

We had no time to dig it out, and could only read the following letters on the under side. The inscription seems to be either of Gordian or Philip.

PI
GVS
RV
N
V
IE
ME

146.

Yalak.

(i.) 'C. I. L.,' 6947.

Philip. No numeral.

(ii.) 'C. I. L.,' 6948.

(?) _____

* The credit of detecting the formula of Decius in this imperfectly-deciphered inscription belongs, not to the copyists, but to my friend Mr. C. H. Turner, Fellow of Magdalen.

145.
None.

144.
'C. I. L.,' 6949 in Yalak (Greek).
(?) P M Δ.

143.
None.

142.
None.

141.
(i.) In the southern cemetery at Gyuksun. Much defaced.

```
        IMP
      CAESAR
......VIAI......I
     .....V....S
  .............NO
    ....R.....NI
     ....P.......
     ....L.......
      ....AMPC
  .....MO......V..
  ....PIAOGT....
   ........AIE...
   ....O....A.....
CXLIPMA
```

The indications suit the formula of Gallus and Volusianus best, but are not clear. Perhaps that of Sept. Severus* has been also used.

On the opposite side the following letters of another inscription can be read:—

CC
MTHEO

This is part of the formula of Elagabalus.

(ii.) 'C. I. L.,' 6934, 6935, *ibid.*
Gordian
Diocletian (?) } P M A.

(iii.) 'C. I. L.,' 6933, *ibid.*
Maximin
Diocletian (?) } P M A.

140.
None.

* Mr. F. Haverfield suggests that P I A O G T in line 11 = F L A C C U [M (which is a possible epigraphic confusion): A I E of line 12 = M L E [G, and line 13 contains the remains of pr]o [pr]a[etorem. I have to thank Mr. Haverfield for other helpful suggestions and corrections.

139.

None.

138.

'C. I. L.,' 6945, at Keklik Oglu.

Maximin PAH.

137.

(?) 'C. I. L.,' 6946, at Keklik Oglu.

Philip.

136.

(i.) One mile from Keklik Oglu, on the road towards Gyuksun Upper part erased.

	[Imp. Caes.]
	[Gaio Julio Vero]
...IMINOPIO	Max]imino pio [fel.
...ICIAVGTRIB	inv]ic(t). aug. trib.
.....	[pot. pont. max.]
..PL...N....	p. p. pe]r L[ici]n[ium
.....AVG	[Serenianum leg.] aug.
PR...PR	pr. pr.
PAS	PAS

(ii.)

IM.	Im[p.
CAE...	Cae[sar
VIVI.....	G.] Vivi[us Trebo-
N...GAL...	n[ius] Gal[lus
E..MP.....	e[t I]mp [Caesar
.VIVIVS	G.] Vivius
.ELDVMI...	V]eldumi[nia-
.VSVOLV...	n]us Volu[sia-
.VSPIIFELICI...	n]us pii felic. i[nv-
....AVG.....	icti] aug[g. vias
.TPONTES..	e]t pontes [ve-
VSTATECON.	t]ustate con[l-
.PSASRESTITV.	a]psas restitu[e-
V..VTPERAN.....	r]u[n]t per A. (V)[irgilium
MAXIMVM..	Maximum [v. c.
...AVG.PR..	leg.] aug[g]. pr. [pr.

135.

None.

134.

In the eastern cemetery at Gyuksun, much defaced.

P R
A N O R V F O
T S S
. . . . . .
. . . . . .
. . . . . .
. . . . . S E T
I I G E N
. . . . . .
. . . . . .
. . . O . . . . . R E
C X . . . . . P Λ Δ

133.

'C. I. L.,' 6930, at Gyuksun.

Elagabalus. P Λ Γ.

132.

In the eastern cemetery at Gyuksun. Only the numeral is legible.

M C X X X I I P Λ [B

131.

In the graveyard near Mehemet Bei Koi, on the high road to Gyuksun; right of the road. 'C. I. L.,' 6944.

I M P C I . . L . . . . . } Philip.
D I O C L E T I A N O } Diocletian.
E S M A
. . A N . . .
. . . . I V L . . .
A V G G . . . T I T V . .
. . . . M . . . .
V . . . . . I E . . .

130.

(?) (i.) 'C. I. L.,' 6942, 6943, *ibid.*

{Philip.
{Diocletian.

130—*continued.*

(ii.) 'C. I. L.,' 6940. At Gyuksun.

PA

129.

None.

128.

None.

127.*

None.

126.

None.

125.

(?) (i.) 'C. I. L.,' 6931.

Elagabalus.

(ii.) Gyuksun, in the southern cemetery = Sterrett, No. 277, 'C. I. L.,' 6939.

IMP	Imp. [Caes.
LUCE	Luc. [Domitio
AVRELIANO	Aureliano
N	. . . . .
NV	i]nv[icto aug.
TRIB ☙ PO	trib. ☙ po[t.
COS ☙ PP	cos. ☙ p. p. [vias et
TESVETTVSTA	pon]tes vettusta[te
NLAPSASRESTITV	co]nlapsas restitu-
IT ☙ PKE	it ☙ PKE

This is the only milestone of Aurelian identified on this road.†

(iii.) 'C. I. L.,' 6924, at Kanli Kavak.

PKE

---

* 127 is given in 'Hist. Geog. of A. M.,' p. 274, as the exact distance from Melitene to Cocusus.

† Prof. Mommsen (in Addit. Suppl., vol. iii., C. I. L.) is of opinion that this stone has been miscopied, and should be ascribed to Alexander Severus and read as No. 152, ii.

124.

(?) (i.) In a small cemetery 40 min. east of Gyuksun. 'C. I. L.,' 6928.

IMPCAESAR
LSEPTIMIVS·SEVERVS
PIVS·PERTINAXAVGARABADIAB
PARTHMAXPONTMAXTRIBPOTVI
IMPXICOSII·PP·PROCOS·ET·IMP·CAES·
MAVREL·ANTONINVSAVG·
ET·SEPTIMIUS AVGG RESTITVERVNT
PER·CIVLIVMFLACCVMAELIANVM·LEGPRPR

Imp. Caesar
L. Septimius Severus
Pius Pertinax Aug. Arab. Adiab.
Parth. Max. pont. max. trib. pot. vi.
imp. xi. cos. ii. p. p. procos. et Imp. Caes.
M. Aurel. Antoninus Aug.
et [P.] Septimius [Geta] restituerunt
per G. Julium Flaccum Aelianum. leg. pr. pr.

AVGG is written large over the erasure of Geta's name.

(?) (ii.)

I...	I[mp.
CAES	Caes.
DIVISEVE..	divi Seve[ri
NEPDIVIM..	nep. divi M. [An-
TONINI	tonini
FIL	fil.
MAVRAN..	M. Aur. An[to-
NINOPIOFELIC.	nino pio felic[i
AVG	aug.
MILIARESTITV	milia restitu-
TAPERMVLPOFELL	ta per M. Ulp. Ofell-
IVMTHEODORVM	ium Theodorum
LEG AVG	leg. aug.
PR PR	pr. pr.

(?) (iii.) 'C. I. L.,' 6936.
Gordian.

(iv.) 'C. I. L.,' 6938.
Diocletian.

123.

(i.) In a roadside cemetery about 70 min. east of Gyuksun.

	[Imp. Caes.]
VSIV	Marc]us Ju[l. Phil-
SFU	ippus piu]s f[elix in-
VSIET	victus a]u[g.] et [Marcus
P	Jul. Phili]p[pus nobili-
I..S	ss]i[mu]s [Caesar vias
O F	et p]o[ntes vetustate
CONS SSA	con[lap]s[as rest-
ATPETLA	ituerun]t pe[r Anton-
MEMMIVM	ium] Memmium [Hieronem
LEG AV	leg. Au[g.
PRPR	pr. pr.

(ii.)

A.....
PH.....IP.....
CET...A...
TRIBP....
....PC...O

122.

(?) (i.) 'C. I. L.,' 6927. In a cemetery 1 hour 40 min. E. of Gyuksun.
Sept. Severus.

(ii.) 'C. I. L.,' 6932.
Maximin. PKB.

121.

(?) (i.) 'C. I. L.,' 6929.
Sept. Severus.

(?) (ii.) 'C. I. L.,' 6941.
Philip.

(?) (iii.) 'C. I. L.' 6937.
Diocletian.

120.

'C. I. L.,' 6925. At Kanli Kavak.
PK

119.

None.

118.

(i) In the cemetery at Kanli Kavak.

	Imp. Caes.
.....N...	[Marco A]n[ton-
..D...A...NOP...	io Gordi]a[no pi]o felici
GVSTORI	au]gusto r[esti-
ERCVS	tuerunt p]er Cus[pidium
MINIUM	Fla]minium [Severum
ATVMPROPR	leg]atum propr[ae-
EM	tor]em
PIH	PIH

(ii.)

PIH	PIH

The following stones in the cemetery at Kanli Kavak belong to stations unknown :—

(i.)

E.CVSPI....	p]e[r] Cuspi[dium
MIN.....IERON	Fla]min[ium (Severum)
PR P	legatum] pr[o]p[raetorem

The name of [Ant. Memmium H]ieron[em], Philip's legate, also appears on the stone.

(ii.) The stone is very much worn, and may be identical with Sterrett, No. 314, where only the last line is given = 'C. I. L.,' 6926.

IMP	Imp.
CAESAR	Caesar *
IIA^VÇP	
ERV	
GMAX	max.
COSPROCOS	cos. procos.
IV	
.....	
.....	
.....	
AVG	[leg.] Aug.
PRPR	pr. pr.

(iii.)

VOL	Vol[usianus pii felic.
INVICTI	invicti [Augg.

* Mr. Haverfield suggests *Maximin*, as the only sole ruler who inscribes *leg. aug.* on his stones; but calls attention to this unique occurrence of *cos. procos.* here among milestones on this road.

118—*continued.*

(iv.) Lower part only.

.....T.....	vias et pon]t[es vetus-
.....N.APS..	tate co]n[l]aps[as
....TV...NT....	restitu[eru]nt [per A.
...CII.....	Vir]gil[ium Maxi-
MVM.....C....S.....	mum [virum] c[lari]s[simum
GAVGG	leg. augg.
PRPR	pr. pr.

(v.) A stone on which four inscriptions are hopelessly entangled.

a. (?).
b. Maximin (?).
c. Philip.
d. Diocletian.

(vi.) 'C. I. L.,' 6923.
Diocletian.

(vii.) 'C. I. L.,' 6926.

(viii.) 'C. I. L.,' 6918, 6919, 6920.
{Elagabalus.
Gallus and Volusianus.
Diocletian.

(ix.) 'C. I. L.,' 6921, 6922.
{Septimius Severus.
Diocletian.

(x.) 'C. I. L.,' 6917.
Philip.

(xi.) 'C. I. L.,' 6915, 6916.
{Philip.
Diocletian.

(xii.) 'C. I. L.,' 6914.
Philip.

(xiii.) 'C. I. L.,' 6913.
Gordian.

(xiv.) 'C. I. L.,' 6912.
Elagabalus. PKI, *i.e.* PKΓ (?).

(xv.) 'C. I. L.,' 6911.
{Sept. Severus
Diocletian.

117.

None.

116.

None.

115.

(i.) In a small cemetery about half an hour east of Kanli Kavak, to the left of the modern road.

IMPCA..
LSEPTMIVS ı SEVERVS
PIVS ı PERTINAX ı AVG ı ARAR ı ADIAR
PARTHMAXPONTMAXTRIRPOTVI
IMPXICOSII ı PP ı PROCOS ı ETIMPCAES ı
MAVRELANTONINVS ı AVG ı.....
.....TITVERV..
PERCIVLF...CVMAELIANVM ı LEG ı PR ı PR ı

Imp. Ca[esar
L. Sept[i]mius ı Severus
Pius ı Pertinax ı Aug. ı [A]ra[b]. ı Adia[b].
Parth. Max. pont. max. tri[b]. pot. vi.
imp. xi. cos. ii. ı p.p ı procos ı et Imp. Caes ı
M. Aurel. Antoninus ı Aug ı . . .
. . . . . res]tituer[unt
per G. Jul. F[lac]cum Aelianum ı leg ı pr ı pr ı

(R is written for B throughout.)

(ii.)

PERC...IVMFLA.	per G. [Jul]ium Fla[c-
CVM....A.LIANVMCLS	cum A[el]ianum [leg.
	[aug. pr. pr.]

(iii.)

IMP	Imp.
CAESDI	Caes. di-
VISEVERI	vi Severi
NEPDIVIMAN	nep. divi M. An-
TONINIFILM	tonini fil. M.
AVRELANT...	Aurel. Ant[oni-
NOPIOFELICI	no pio felici
AVGMILIA	aug. milia
RESTITVTAPER.	restituta per [M.
VLPOFELLIVM	Ulp. Ofellium
THEODORVMLEG	Theodorum leg.
AVG PR PR	aug. pr. pr.
MPIE	MPIE

115—*continued.*

(iv.)

CIC	
C...APSASR.....	c[onl]apsas r[estituerunt
PERANTO.....	per Anto[nium Memmi-
...IE.ON..	um H]ie[r]on[em

(v.) Stump with only the numeral left.

PIE	PIE

(vi.)

E
M
VAVG
C

114.

Lower fragment of a stone in the Dunyat Bel.

PR
MPIΔ

113.

By the roadside, 1 mile from the Dunyat Bel stone. Broken R.

LSEPTIMIVS.....
PIVSPERTIN.....
PARTHMAXPON.....
IMPXI'COS'II'PPPR.....
MAVREL'ANTO..
NVSAVGET....
....RES.....
PERCIVLIVM....
CVMANVM'L.....

[Imp. Caes.]
L. Septimius [Severus
Pius Pertin[ax Arab. Adiab.
Parth. Max. pon[t. max. trib. pot. vi.
imp. xi. cos. ii. p. p. pr[ocos. et Imp. Caes.
M. Aurel. Anto[ni-
nus Aug. et ....
..... res[tituerunt
per G. Julium [Flac-
cum [Aeli]anum l[eg. aug. pr. pr.

112 to 101.

None.

100.

(i.) 'C. I. L.,' 6907 at Ziyaret Serai.
Sept. Severus. P.

(ii.) 'C. I. L.,' 6910, *ibid.*
Sept. Severus. (?) C.

99 to 95.

None.

In Yarpuz are two stones of uncertain provenance.

(i.) 'C. I. L.,' 6908.
Philip (?).

(ii.) 'C. I. L.,' 6909.

94.

(i.) 'C. I. L.,' 6906. In a cemetery about 4 miles E. of Yarpuz; broken at the bottom.

IMP ☙ CAESAR	Imp. Caesar
MAVRELIVSSEV	M. Aurelius Sev-
VSALE.....	er]us Ale[xander
PIVSFELICT..TR	pius fel. i(nv). [Aug.] tr-
IB ☙ POTEST ☙ COS	ib. potest. cos.
PP ☙ VIASETPONT	p. p. vias et pont-
ESVETTVSTATE	es vettustate
NLAPSASREST	co]nlapsas rest-
T ☙	ituj]t.

(ii.)

I.....	I[mp.
G....R(?)	C[aesa]r[i
AIOVL....VS	G]aio [J]ul[io Vero Ma-
XIMI..P..	ximi[no] p[io
FELIC.AVG..	felic[i] aug. [p. m.
	[trib. potest. p. p.]
	[per Licinnium]
	[Serenian-]
..LEG..	um] leg. [Aug
	[pr. pr.]

93 to 59.

None can be certainly ascribed. The following are of uncertain provenance:—

(i.) 'C. I. L.,' 6905. At Izgin.

IMPCAES
MANT
CORDIANO
PUSFE
UC CAES
MAXIMIA
TRIBPOTEST
ESRESTIT
PERCUSPIDIUM
F AM
UG

Of this only a fragment is published in 'C. I. L.' The formula of Gordian is fairly complete. Confused with it is that of another emperor, who records his tribunician power, and therefore is not Diocletian, but almost certainly Maximin.

(ii.) 'C. I. L.,' 6904, *ibid.*
Sept. Severus.

(iii.) Albistan, in the cemetery. Sterrett, No. 345. 'C. I. L.' 6903.

...CAES	Imp.] Caes.
.....VER.NEP	divi Se]ver[i] nep.
.....ARI	[divi M. Antonini fil.]
.....N.UM...	M. Aur. A]n[t]on[ino
....E....AVG	pio f]e[lici] aug.
.....RESTITVT.	milia] restitut[a
...MVLPOFELLI..	per] M. Ulp. Ofelli[um
THEODORUM	Theodorum
...AVGPRPR	leg.] aug. pr. pr.

(iv.) *Ibid.*, intentionally defaced. A few letters have been overlooked by the defacer on the extreme left, viz.:—

...ER..	Sev]er[us
..AB	Ar]ab.
O	

(v.) *Ibid.*, intentionally defaced.

[Several lines gone.]
vetust ATECO nlapsas
RE stituiT per
Antoni] VM Memmium HIER onem
leg. AVG
An inscription of Philip.

93 to 59—*continued.*

(vi.) *Ibid.;* half buried, upside down. Traces of red in the lettering

..GUS
ANC.....ISJ\..
E.....F.....CIG
.....
NOBBC/ES

Apparently the remains of an inscription of Diocletian.

(vii.) On the other side of the same stone.

IUU
COC..ANTIO
ICA
NOO

Co[nst]antio

An inscription of Diocletian.

(viii.) *Ibid.*

LI⁻ S R
C
.....
AV
RIS V
T
A

58.

Ibid.; surface deliberately damaged. The numeral, however, is clear.

.....ΓEA.....
.....GAVG
NH

From these milestones and other sources Liebenam's* list of governors of Cappadocia may be emended and supplemented to some extent.

(?) A.D. **177–181.** *L. Alfidius* (?) *Herennianus* (?)† (Tertullian, 'Ad Scap.,' iii.).

(Lieb. No. 17.) **198.** *G. Julius Flaccus Aelianus* can be dated precisely.

(Lieb. No. 20.) **218.** (?) *M. Ulpius Ofellius Theodorus* [not "*Orellius*"]. Ought to be placed before Nos. 18 and 19 (?).

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* 'Forschungen z. Verwalt. d. römischen Kaiserreichs,' p. 119. Cf. 'C. I. L.' iii. Sp. 1252.

† This is Prof. Ramsay's conjecture for the name in 'Ad. Scap.' iii., usually read *Cl. Lucius Herminianus*, but variously given by the MSS. and commentators (ed. Migne, p. 702). Prof. Ramsay thinks that the name L. Alfidius Herennianus (who was Consul in 171 A.D.) suits the circumstances alluded to by Tertullian, and explains the MSS. variants.

(Lieb. No. 21.) **235–6.** (?) *Licinnius Serenianus.*

Prof. Ramsay refers to Cyprian, 'Epp.,' 75, 10, where Serenianus, "acerbus et dirus persecutor," is said to have been Governor of Cappadocia in 235 A.D.

(Lieb. No. 22.) **238.** *Cuspidius Flaminius Severus.*

244–5. (?) *Antonius Memmius Hiero.*

This is the M. Ant. Memmius *Senecio* placed in the 1st century by Liebenam (No. 6, p. 122). Whether the M. Antonius Memmius (*cf.* 'B. C. H.,' vii., p. 38), governor of Galatia while "prætorius," is the same person, as Liebenam states, or no, must remain uncertain, as we do not know his second cognomen. Prof. Ramsay, however, says that the lettering of the Galatian inscription suits a 3rd century date.

251–2. (?) *Aulus Virgilius Maximus.*

C.—History of the Road.

The history of the road is to be learned from its milestones. As a *made road*, it probably does not date farther back than the end of the 2nd century of our era, when it was constructed for military purposes, as part of the defences of the Euphrates frontier. A *trade route*, however, traversed Anti-Taurus at least as early as 100 B.C., when Artemidorus described it. Strabo (p. 663) quotes from him that the eastern section ran from Mazaca to the Euphrates *μεχρὶ Τομίσων χωρίου τῆς Σωφηνῆς διὰ Ἡρφῶν πολίχνης χίλιοι τετρακόσιοι.* This meagre notice is not of much assistance in determining the exact line, for *Ἥρφαι* or *Ἥρπα*, as we know from Strabo himself (pp. 537–539), was situated on the Zamanti Su, which is west of the point where the roads to the Yedi Oluk and Kuru Chai Passes diverge. There was a route over the Yedi Oluk, and thence round the northern end of Bimboa Dagh, in Roman and Byzantine times, which, though slightly more difficult, is shorter in point of distance to Arabissus than the Kuru Chai-Gyuksun line. If, however (as we shall try to prove), Severus was the first constructor of the military *chaussée*, the use of "*restituerunt*" in the formula on his milestones implies a track previously in use, reconstructed by him as a Roman made-road; and if that be so, there can be little doubt that the track which preceded the military *chaussée* was the well-known *κοινὴ ὁδός* to the east. It was doubtless of similar character to that of modern main tracks in the Anti-Taurus—that is to say, it was engineered, and, to some extent, built up. Precipitous places were banked or cut, and steep grades rendered easier by zigzags; but no roadway was laid on stone foundations until Roman builders came into the district, whose advent can hardly have happened before the end of the first century of our era at the earliest: for there is no evidence, in the shape of colonies or other cities bearing the names of emperors, to show that any of the great colonising princes of the first two

centuries concerned themselves with Cataonia. The milestones make it practically certain that it was at the very end of the second century that the construction of the Roman road was actually begun.

Out of 89 stones collected from 60 miles of the road, there are none earlier than the reign of Septimius Severus; and it must be remembered that at least one apparently *complete* group—the 149th—has been found. The chances are, therefore, very strongly against any stone of an earlier emperor existing. The inscriptions of Septimius Severus are, in all cases that we have seen, cut on a fresh stone, not over any erased lettering; and, as has been remarked above (p. 654), have been respected most frequently by the lapicides of later reigns, who have defaced so freely the inscriptions of other emperors.

A further argument may be drawn from a comparison of the formula of Severus with those of his successors. His stones only are dated precisely to a certain year in the middle of his reign, whereas all the other formulæ imply either the first year of the several emperors, or a vague period in their reigns, not specially marked.*

The date of Severus' work seems to be late in the year 198 A.D. His milestones are inscribed with his VIth *tribunicia potestas* (December 10th, 197, to December 9th, 198), but later than the assumption of Caracalla and Geta (probably June 2nd, 198). As, however, the emperor was in his XIth *imperium* (198–199, according to Cagnat †), and had assumed the title Parthicus Maximus, not known otherwise before 199, we must bring down the date of the stones as late as possible in 198, to the end of November or the beginning of December. The assumption of the title Parthicus Maximus would be known first in the East, where Severus himself was at that period, and, therefore, might easily appear on Cappadocian milestones before it had been published generally through the empire.

If Severus be accepted as the emperor under whom the construction of the military road connecting Caesarea with Melitene was undertaken, we can credit him with a wise measure of defence, quite in keeping with his subsequent policy in Britain. How great a part he played in the organisation of the whole scheme of the Eastern frontier defence will be better known when the Euphrates valley has been carefully examined; on the slight evidence now available it is impossible to say definitely who first planned the lines. According to Dion Cassius (lv. 23), there were two legions stationed in Cappadocia as early as the time of Augustus—XII. κεραυνοφόρος and XV. "Apollonia," certainly associated later with Melitene and Satala: both were in Cappadocia in the time of Corbulo (Tac. 'Ann.,' xv. 26). It is improbable, however, though not impossible

* Precise dating, however, becomes rare on milestones everywhere after Severus.

† 'Cours d'Épigraphie Romaine,' p. 189.

that the *castra stativa* date from so early a period. To the reign of Vespasian, who made Cappadocia a consular command,* and reduced Commagene to a province, we might refer the laying out of a line of camps and posts along the frontier which, though defined by Pompeius, had required further definition by Corbulo, and been but little respected; and there exists one piece of positive evidence of Vespasian's work in Armenia Minor in the shape of a milestone found by Boré at Melik Sherif, which lies somewhere near the site of Arauraca, on the line of the frontier-road from Melitene to Satala.† Dion's ‡ account of Trajan's Armenian expedition, however, makes it appear that no permanent Roman garrison was holding Samosata in 107 A.D.; and, according to Procopius ('de Aedif.,' iii. 4), Melitene owed its foundation as a city to Trajan. The southern section of the Lines, therefore, seems to be of a later period than that of Vespasian.

Beyond the fact of the foundation of Melitene, however, there is no evidence that Trajan laid out any lines on the Euphrates; no milestones bearing his name have yet been found on the roads in the valley of the river. The earliest on the Caesarea-Melitene road are those of Septimius Severus; the earliest found by Professor Sterrett in Syria belong to the same prince.§ Further, as Professor Ramsay has pointed out to me, this negative evidence derives much weight from a comparison with Galatian and Pontic milestones, on which the evidence for the construction of the main road system in the north-centre of Asia Minor by Nerva-Trajan (*i.e.* Trajan in reality), is so abundant and clear,‖ that it would be most unaccountable that none should exist on the Euphrates had Trajan really made the roads there also.¶

We have to choose, therefore, between Vespasian and Severus; or, perhaps, to ascribe the northern section of the Lines to the former, the southern to the latter. The milestone of Vespasian, quoted above, is proof positive that he constructed in 75 A.D. a road in Armenia Minor; but whether that was the road Satala-Melitene, or one from Nicopolis into Armenia Major, cannot be determined at present. Further south the evidence all tells in favour of Severus; and we may conclude with fair assurance that the latter either extended or completed, if he did

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* Sueton. Vesp., 8.

† 'C. I. L.,' iii., 306.

‡ 68, 18.

§ Wolfe Expedition, Nos. 649 (on the road Palmyra—Hamath-Epiphania (?)), 651. To Caracalla belong 648, 650.

‖ See 'C. I. L.,' vol. iii. suppl., pp. 1251 *ff*.

¶ The probable presence of Legio XII. Fulminata among the Quadi in the time of Marcus Aurelius might be used to confirm the supposition that the regiment was not stationed at Melitene till a period later than Trajan, if it had not been so frequent a practice with the emperors to call regiments far away from their *stativa* for campaigns of importance. At a later period, however, this famous legion is always associated with Melitene, *e.g.* by Dion Cassius ('Ep.,' 71) in relating the story of the "Miracle" among

not first lay out in its entirety, the system of lines on the Euphrates which served to keep the East at bay for five centuries. The question naturally arises, *why* the Euphrates was not thoroughly fortified earlier, and, in the present state of our knowledge, this cannot be answered precisely; but there can be little doubt that the key is to be sought in the Armenian policy of Severus as contrasted with that of earlier emperors. He was the first prince, in fact, to recognise definitely that Armenia was a hostile country, pertaining to the East, not the West, and outside the sphere of Roman influence. The formal recognition by Corbulo of the Euphrates as the Roman boundary* in 62 A.D., sufficiently proves that Pompeius' convention, made in 63 B.C., had become a dead letter, and that Rome had constantly regarded the trans-Euphratean states as her clients, and her real boundary as lying farther to the east than the river. In spite of Corbulo's convention, we find Trajan once more interfering in Armenian affairs in 107, and reducing Armenia Major for a short time to the rank of a Roman province.† In the reign of Marcus Aurelius, however, it was once more under its own king, and requiring the presence of Lucius Verus himself to restore Roman influence. No later emperor of Rome, with the exception of Probus, who made a raiding expedition, seems to have meddled with the internal affairs of Armenia Major, which fell under Persian influence about 238. It is a probable supposition that Marcus Aurelius was the last to treat it as a client state, and that Severus

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the Quadi. Dr. Lightfoot has treated admirably many points relating to Legio XII. in 'Epp.' of St. Ignatius, i., p. 474 *ff.* I can add to the instances there enumerated of Fulminata = *κεραυνοφόρος* the following inscription, copied by J. A. R. Munro and myself at Adana in June, 1891. It is a limestone pedestal, slightly broken on the left: it came originally from Kara Tash (Mallus), and is now built into a wall of a cotton-factory near the railway station.

.....ΛΙΟΝΓΑΙΟΥΤΙΟΝ	*Γαΐον Ἰού]λιον Γαΐου υἱὸν*
.....ΑΟΥΙΑΝΟΝΤΕΣΣΑ	*.... Φλ]αουιανὸν τεσσά-*
.....ΔΡΩΝΧΕΙΛΙΑΡΧΟΝΠΛΑ	*ρων ἀν]δρῶν χειλίαρχον πλα-*
.....ΜΟΝΛΕΓΕΩΝΟΣΙΒΚΕΡΑΥ	*τύση]μον λεγεῶνος ιβ Κεραυ-*
....ΟΙΟΥΚΑΙΛΕΓΕΩΝΟΣ Δ	*νοφ]ό(ρ)ου καὶ λεγεῶνος δ*
...ΘΙΚΗΣΟΙΙΕΡΕΙΣΤΗΣΑΘΗΝΑΣ	*Σκυ]θικῆς οἱ ἱερεῖς τῆς Ἀθηνᾶς*
ΜΑΓ.....ΟΝΕΑΥΤΩΝΠΟΛΕΙΤΗΝ	*Μαγ[αρσίας τ]ὸν ἑαυτῶν πολείτην.*

Line 2.—The space at the beginning of the line would require a longer name than Flavianus, unless a contracted form of a tribe-name be inserted.

Line 3.—*τεσσάρων ἀνδρῶν* is a rare literal rendering of "quattuor virorum," *i.e.* he was "IVvir viar. cur.," one of the offices of the vigintivirate, the first stage of the senatorial cursus honorum (compare *πλατύσημον*).

Line 7.—Athena of Magarsa is mentioned 'C. I. G.,' 5875 b; *cf.* Arrian, 'Exped. Alex.,' ii., 5, 9. Magarsa (or Magarsus) is placed by Strabo (p. 676) on the Pyramus near Mallus, and said to have been the burial-place of the heroes Amphilochus and Mopsus.

* Tac. 'Ann.,' xv., 17.

† See Liebenam, 'Forsch.' etc., pp. 49, 122.

emphasised the abandonment of a dream, and his tardy acquiescence in the advice of Augustus—"*intra fines coercendi imperii*"—by completing the fortified lines on the Euphrates of which the road which we followed forms a part.

For the disposition of the camps and troops on the frontier in Severus' time we have very little evidence; the following are the only certain *data*—

Satala	Legio XV. Apollinaris.
Dascusa	ala II. Ulpia Auriana.
Melitene.	Legio XII. Fulminata.
Samosata	Legio VII.*

For the later disposition we have the command of the "Dux Armeniae" in 'Notitia Dignitatum,' cap. 35, and, as we find that the troops there assigned to Satala, Dascusa, and Melitene (Samosata is not mentioned), are the same as in the time of Severus, we may infer that much of the disposition dates from an early period. Unfortunately, it is impossible to say on what principle (if any) is based the order of the place-names in the 'Notitia,' many of which are not easily to be identified, or connected with those in the Antonine Itinerary, Peutinger Table, Ptolemy, or other authorities. The general line of the frontier runs southwards from Trapezus to Satala, and thence down the right bank of the Euphrates; but the known names along this line are not enumerated in geographical order from north to south, but partly according to the character of their garrisons, and their status on the military lists; partly perhaps on some geographical system of strategic interconnected groups, which only exploration of the country itself will elucidate satisfactorily.

From other authorities, especially the Antonine Itinerary, we know the stations on the direct line of the frontier; almost all these occur in the 'Notitia' as points where troops were quartered, but mingled with them are other names, some unknown, some definitely placed by other authorities on cross-roads leading from western centres like Nicopolis and Sebastea, to Satala and Melitene. The system of defence for Asia Minor, therefore, appears to have consisted of three great *stativa* at Trapezus, Satala, and Melitene (to which Samosata may be added), connected by a continuous line of posts, mostly held by auxiliary cavalry (*alae*) or infantry (*cohortes*); while from these radiated chains of posts in various directions.

The scanty authorities which exist for the 3rd century of the Empire furnish no warrant that any of the emperors whose names appear on

* Ramsay, 'Hist. Geog.,' pp. 273–6. But *cf.* Böcking, 'Not. Dign.,' p. 388, *notes*, for the possibility of Legio IV. or XVI. having been originally at Samosata. Later Legio XVI. was stationed at Sura and IV. at Oresa (or Ourfa?).

the Melitene milestones traversed Severus' road. On the only one of Severus' own marches to the East, described in detail,* the emperor followed the recognised route of all such expeditions, viz., a diagonal line across Asia Minor to the Cilician Gates, and through the Syrian Gates to Antioch-on-the-Orontes. The latter city was always the rallying-point of armies destined to co-operate with the Cappadocian, Commagenian, or Syrian legions.

Though the milestones record no restoration later than that of Diocletian, it is practically certain that the maintenance of this, as of other roads in the empire, continued to be an Imperial concern for nearly a century longer. Down to the time of Arcadius the names of emperors continue to appear on *milliaria* in various parts of the East and West, though the instances become rarer and rarer. For example, milestones of Constantine are frequently met with; those of Julian are not uncommon in the West (*e.g.* 'C. I. L.' x., 6884, 6906: Italy, etc.); Jovian's short reign is commemorated both in Italy (6844, Via Appia) and in Cyprus (iii., 219, iv.); stones of Valentinian and Valens appear in Italy (x., 6975), and, with Gratian's name also, at Noricum (iii., 5740); of Theodosius I. and Valentinian II. in Gallia Narbonensis (xii., 5494); of Theodosius, Arcadius, and Honorius on the Via Labicana in Italy (x., 6885, 6910, 6913, etc.); and of Arcadius and Honorius in Attica (iii., 572, 573).

After the reigns of Arcadius and Honorius no emperor's name has, I believe, been found upon a milestone. The explanation is to be found probably in the *Codex Theodosianus*, the provisions contained in which, under the heading *De itinere muniendo* (xv. tit. 3, ed. Gothofred.), show that from the time of Constantine onwards the burden and care of repairing the roads was thrown more and more on local communities in the provinces through which the highways passed.† For example, by an enactment of Constantine, promulgated in 319 A.D., it was enjoined: *Emphyteuticarii possessores . . . ., sicut ceteri provinciales, obsequium suum muniendis itineribus impendant: nulla enim ratione debent ab hoc, quod in commune omnibus profuturum est, esse sejuncti.* Again, in 387, under Valentinian II., Theodosius I., and Arcadius, ordinary immunities from this service were abrogated; and extraordinary privileges in this respect were revoked under Arcadius and Honorius in 399 *propter immensas vastitates viarum.* A notable enactment is that contained in section 6, including "*domos divinas ac venerandas ecclesias,*" in the liability for road-rates, and beginning with the words, "*Absit ut nos instructionem viae publicae et pontium stratorumque operam titulis magnorum principum dedicatam inter sordida munera numeremus,*" which seem to imply the final

* By Herodian, iii. 3: 195 A.D.

† The actual cost of the repairs had probably been borne for some time by the provincials; but the imperial officials were still responsible.

transference of the roads from imperial to local control. This law is dated in 423.

The vanity of the emperors who defaced and rewrote inscriptions, or erected new stones where five or six existed already, would not be imitated by local bodies. The older roads were already supplied abundantly with mile-marks, which sixteen centuries have not effaced, and the ponderous columns of the earlier emperors were not renewed. Sidonius Apollinaris, in the middle of the fifth century, speaks of them as relics of a former age:

"agger
Cujus per spatium satis vetustis
Nomen Caesareum viret columnis." *

Thus the practice of erecting mile-pillars was discontinued in the beginning of the fifth century of our era, and not revived till almost modern days; but for many centuries the old stones must have sufficed as a standard of measurement and a solace to the traveller.

"Intervalla viae fessis praestare videtur
Qui notat inscriptus millia crebra lapis." †

How the mile-intervals were marked, or whether they were marked at all, on roads made later than this period, it is impossible to say. We travelled in 1891 along the line of a Byzantine road from Sis (Flavias) to Hajin (near Badimon), without finding any trace of mile-marks; and the same may be said of the road which led down the Lycus valley from Colonia to Neocaesarea, the embankment of which may be seen in many places. Wooden marks, if any, must have been used.

The cessation, therefore, of milestone-inscriptions on Severus' road might be looked for naturally not long after Diocletian's time. The fact that they actually cease with Diocletian himself, and do not record any restoration by Constantine or his immediate successors, may be explained variously. *Milliaria* of Constantine, though not rare, are much less frequently met with than those of Diocletian, or such of his predecessors as had long reigns; and it is possible, therefore, that Constantine had his stones erected only on newly-made roads, or where the older stones really required replacing; in fact, that he did not continue the boastful and unnecessary practice of adding a ninth or tenth to the small groves of stones which already marked the mile-intervals. It should be remarked, however, that the later *milliaria* are generally of small size, and, therefore, more easily buried under silt, or conveyed to a distance to serve as modern building material, than

* Carm. xxiv., 5, quoted by Gothofredus, *l.c.*

† Rutil. Gall. Itin. ii., 7. Professor Ramsay compares 'C. I. L.' iii., suppl. 7080, where a similar idea is expressed upon a milestone of Valentinian, Arcadius, and Theodosius at Assus, dedicated *ad solacium lavoris (et) festinationis.*

the older pillars; and therefore that their rarity may be due partly to the greater difficulty experienced in finding them. When allowance, however, has been made for such causes, it still remains probable that inscriptions on *milliaria* (like *all* inscriptions upon stone or marble), did become rarer and rarer as the 4th century advanced.

One point remains to be mentioned in this connection. There exist on Severus' road, as on other Roman highways, a considerable number of *uninscribed* milestones, which may belong to a restoration other than those recorded. We found such stones lying with groups *in situ* at the 136th and 114th stations, and many others were noticed both by Professor Sterrett and ourselves. The fact that they are found in the groups with other inscribed stones makes it improbable, though not impossible, that they are merely surplus material, never put into the lapicides' hands; and it seems not unreasonable to suppose that they do represent a later restoration than Diocletian's—perhaps one carried out by the local communities, and commemorated *more antiquo* by a stone, but one bearing neither emperor's name, nor (as so many records of the distance already existed at each station) any numeral.*

When Justinian † constituted the province of Armenia Tertia with Melitene for its capital and Arga, Arabissus, Cocusus, Comana, and Ariarathia for its principal towns, Severus' road must have served as its main artery, for all the places abovementioned are on the direct line of the road. The importance, however, of the easternmost section ceased with the beginning of the 8th century, when the Byzantine emperors lost all permanent control of Melitene; ‡ and we do not hear of this part of the road again, although it continued to be used for local traffic until quite recent times. But the section west of Arabissus, whereby access was obtained to the Jihan Pass, still continued to be of some military and commercial importance; over it passed, for example, the raids of Basil in 877, and Romanus Diogenes in 1068, and the crusading expedition of Raymond, Bohemund, and Godfrey in 1097.

Lying as they do on the direct route from Constantinople through Angora and Kaisariye to Syria and Baghdad, we should naturally infer that the valleys of the Saros and Gyuk Su were traversed by a much-frequented road until the period at which the introduction of steamships brought the "half-sea" route by Samsun, Sivas, and Malatia into prominence. It must be confessed, however, that appearances in the Anti-Taurus region itself are not favourable to such an inference, and seem to point to the road in these valleys having fallen into comparative obsolescence many centuries ago. In the first place, the state of

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* The numeral is often omitted on stones otherwise inscribed in full.

† Novell. xxxi.; *cf.* Ramsay, 'H. G.,' p. 313.

‡ 'H. G.,' p. 277. It was held for a short time by Constantine Copronymos in 752, but never again by a Byzantine emperor.

preservation in which the Roman roadway and milestones are found at this day is such as can only be paralleled in districts long deserted, like Cilicia Tracheia; secondly, the absence of old settlements and old populations in the valleys is very remarkable. Even in Gyuksun we found only Turkmans, still in a partially nomadic state, and a dying remnant of the Armenians who colonised the region in the 11th century. The villages around are, with hardly an exception, new settlements of Turkmans, Kurds, Avshars, or Circassians; and only in Yarpuz does there appear to survive an old "Turkish" element. There are no old *khans* on the line of the road, and it is obvious that the Jihan Pass itself has not been a trade route of importance for a long time, so thickly overgrown and so utterly broken up is the roadway. It is hard to believe that a district which preserves so faithfully relics of the 3rd and 4th centuries, but has so little to show from that date until our own time, and withal has no population older than the Armenian, can have been traversed by a first-rate trade route up to fifty years ago!

The reason for the desertion of this road for those through the Cilician and Amanic Gates, or by Sebastea and Melitene (if desertion there was), is perhaps to be explained by the insecurity which it owed to its long course among, or close under, mountains. As early as 404 we learn from John Chrysostom's letters, written at Cocusus, that the whole district, including even the towns of Cocusus and Arabissus, was continually exposed to the raids of the "Isaurian" brigands,* and the Archbishop draws a vivid picture of the miserable condition of his place of banishment, a picture which, even when allowance is made for an exile's point of view, does not suggest that Cocusus was even then on a flourishing trade route.

When the Armenians of the Exile came southward in the early part of the 11th century, they seem to have found in south-eastern Cappadocia a No-man's Land, for every place of importance now existing in that region was either, like Egin, Arabkir, and Albistan, founded by them, or, like Gyurun, so thoroughly "Armenized" that it is difficult to suppose that any considerable population was found already in possession.† The Anti-Taurus district was the first home of these energetic exiles; in 1064 Constantine Ducas gave "Dzamentav" (Tsamandos-Ariarathia, *i.e.* Azizie) to Kakig of Ani,‡ and all the chief towns between

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* The references to the "Isaurians" are legion. *Cf.* Ep. ad Olymp. xiii., p. 610 (ed. Migne), where it is said that the brigands were strong enough to defy the soldiers in garrison at Cocusus; *cf.* lxx., p. 647, for the state of siege in which Arabissus was kept.

† See St. Martin, 'Arménie,' i. p. 180, &c. Also note that Tudebodius (*v. infra*) calls even the tract between Eregli and Kaisariye "Hermeniorum terra" in the 11th century.

‡ Dulaurier, in the introduction to the Armenian volume of the 'Recueil des Hist. des Croisades,' p. L.

the Tokhma Su and the Taurus date from about the same period. The change in the condition of Cocusus is shown in the contrast between John Chrysostom's description and that of the monk Tudebodius, who followed that section of the crusading army which passed down the Saros valley in 1097, and found "Coxon" (Gyuksun), "stipata omnibus bonis quae nobis erant necessaria."* Such prosperity was probably short-lived, for the more adventurous spirits pressed on southward, and presently established themselves south of the Taurus, leaving the northern towns on debatable ground between themselves and the Seljuk sultans;† for the frontier of Cilician Armenia was the Taurus, as is shown by an enactment of Leon II. with regard to a customs-house in the Jihan Pass.‡

The fall of the Cilician kingdom in 1375 saw the establishment of Zeitun as a centre of guerilla warfare within two days' march of Gyuksun, and the Armenians must have made trade through this part of the Taurus practically impossible: I was assured in Marash in 1891 that it was only within the past fourteen years that the passes had been opened. It is not wonderful, therefore, if merchants preferred long routes to inevitable encounters with Zeitunlis and Hajinlis.

I rely, therefore, both on the present aspect of the Anti-Taurus region and historical probability in advancing the view that Severus' road has been obsolete for many centuries. The revival of prosperity by the Armenian immigration was only temporary: Turkmans soon descended into the valley of the Gyuk Su, and maintained themselves there among the fast disappearing Christians,§ and in recent times successive immigrations of unruly Kurds, Avshars, and Circassians have effectually prevented any return of trade. If merchants or muleteers wish to go from Marash to Kaisariye, unless a very large caravan can be collected, they make a circuit of twelve days by Adana and the Cilician Gates, instead of going in six days by Gyuksun.‖ Hence it has come about that the region of Anti-Taurus is so wild a land at the present day; and that the traveller may observe in the valleys of the Saros and Gyuk Su relics of an old order which have often been lost elsewhere, and study among new peoples the signs of a new order which may affect deeply the future of the Ottoman Empire.

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* 'Hist. de Hierosol. itin.' ii. 5, ed. Migne. See p. 650, *supra*.

† See p. 677, note, *supra*, for the condition of Albistan, which is a case in point.

‡ Dulaurier, op. cit. pp. xxvi., xcviii.

§ There are only 28 Christian families now in Gyuksun.

‖ Our Kaisariote muleteers waited ten days in Marash in 1891, until a caravan of 30 could be got together, and even then one preferred to take his animals by the longer route rather than risk a meeting with the Zeitunlis or the Mussulman nomads of Anti-Taurus.

PART III.

NOTES ON ROADS IN THE VILAYET OF SIVAS.

By J. A. R. Munro.

The road-systems on either side of the upper Halys, northwards to the Black Sea and southwards to the Taurus, converge upon Sivas. From this centre radiate roads leading to Kaisariye, Gyurun, Malatia, and Devrik on the one side, and to Yuzgat, Samsun, Unie, Ordu, Kara Hissar, and Erzinjian on the other. The great highway of communication between the north and west and the south and east lies over the Chamli Bel and the passes south of the Halys, which is spanned near Sivas by two stone bridges. By this route pass the post-road to Baghdad, and a considerable caravan and araba traffic. It is easy to understand the importance of Sivas in such a situation.

That importance is of no recent growth. Sivas is the modern representative of the ancient Sebastea, which was probably Pompey's Megalopolis, renamed in early imperial times. The lack of inscriptions * and other relics of antiquity may suggest that the modern town does not occupy the exact site of the ancient; but several magnificent buildings attest the fact that Sivas was one of the earliest seats of the Seljuk power in Asia Minor. The position has, indeed, been of capital importance ever since there were roads in the country; and quite recently (1884–5–6), a complete network of good *chaussées* † has been extended from this centre throughout the vilayet. Sivas is thus the natural starting-point for an account of the roads in this part of Asia Minor, whether ancient or modern.

Sivas lies in the flat plain of the Halys, about a mile from the right bank, at an elevation of 5077 feet (24·95 : 71°) ‡ above sea-level. The river-bed is here about 80 yards wide, and is crossed by a stone bridge of 18 arches, with a slight bend against the current in mid-stream. The river, although not large in summer, is fairly rapid; and great quantities of timber are floated down from the hills along its upper waters to the bridge, where they are hauled on shore by teams of oxen. The other bridge is a couple of miles lower down.

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* One from Pilkinik, "one mile or more from Sivas;" 'Journal of Philology,' 1882, p. 150.

† They are, however, already in need of repair. Many of the wooden bridges in particular have collapsed, and torrents have swept away the road in places.

‡ The heights throughout Part III. are given as computed from our observations; I add the latter in brackets. We used R. G. S. aneroid No. 15, and the Fahr. scale.

I.—*Roads south of the Halys.*

Of the roads south of the Halys we are here concerned only with those which lead from Sivas to the valley of the Tokhma Su, one to Malatia, near the Euphrates, the other to Gyurun, at the upper end of the valley, just above the junction of the two branches of the river. The former is the highway from Constantinople to Baghdad; the latter has only recently been made practicable for wheels. For the first 25 miles they coincide.

Leaving Sivas by the upper bridge, the road ascends abruptly 1300 feet, and descends again by a long gully to the Turkish village of Bardabash, which lies beside a small salt lake about half a mile to the right. After crossing a second ridge (5818 feet : 24·30), an open, well-cultivated valley is reached, where beside two large salt lakes is the Christian village of Ulash, six native hours from Sivas. The village contains 140 houses, and has a prosperous air, rich in crops and cattle. Very large salt-pans exist near it, and gypsum is to be seen everywhere where rock crops out. An araba road (not a *chaussée*) from Tonos and Kaisariye comes in here.

Through travellers will save a wide *détour* by taking the track to the left of the main road before reaching Ulash, and following the telegraph along the eastern shore of the salt lakes close under the Terja Dagh.

An hour south of Ulash the road forks to Gyurun and Malatia. The Malatia branch bears away to the south-east, up a grassy valley watered by a clear stream, to the pass of Delikli Tash. This pass is the one striking point between Sivas and Kangal, and forms the watershed between the Halys and the Euphrates. The road is confronted by the wall of a plateau 1000 feet high, up the face of which it climbs under precipitous crags. The most prominent of these is the great Delik Tash, which gives its name to the pass. There is no ravine—merely a steep winding ascent. The view of the valley and scarped slopes of the Terja Dagh from the summit is impressive but dreary. At the base lies Maghra, an Armenian village, and half a mile over the edge of the platform is the village of Delikli Tash. The upland extends for about five miles, sloping very gently to the south, and is succeeded by open, undulating country, over which the road winds for two hours to Kangal. The levels over this section of the route are: Ulash (5483 feet: 24·60 : 71°); a mill on the stream below Delikli Tash (5711 feet: 24·40); village of Delikli Tash (6879 feet: 23·40 : 67°); Kangal (5582 feet : 24·5). On August 10th the thermometer registered only 67° Fahr. in the shade at 11 A.M. at Delikli Tash.

The general aspect of the country is much alike on both sides of the watershed. If there is a distinction, the south is even more bare and

monotonous than the north. The whole land lies so high, that the hills lack character; they have no striking outlines, but rather run in continuous ridges. There is a total lack of trees, and the not inconsiderable area of cultivation, chiefly corn-land, is lost in the general barrenness.

Kangal is reckoned 14 caravan hours from Sivas and 33 from Malatia. It is a large village, half Turkish, half Armenian, situated in a wide shallow basin between low hills. The land round about is well cultivated. There is a mosque with a new minaret, and an Armenian church. The village is evidently of some antiquity, for the church, now mostly of wood, has been rebuilt partly of older materials, and fragments from buildings are to be found in the cemetery. In the church is treasured an illuminated Armenian manuscript of the Gospels, with a rich binding ornamented with brass figures and red stones, said to be eight centuries old. The Roman road from Sebastea to Melitene must have followed much the same course as the modern route; and Professor Ramsay* has very plausibly placed the Euspoena of the Antonine Itinerary at Kangal.

We here leave the Malatia road and strike south-westwards to rejoin the Gyurun road at Manjulik. The intervening country is arid and bare, open valleys between low white earthy hills, and very desolate. The only village on the road (which is easy and fairly level, although not "made") is Tirza Khan, a group of miserable hovels with a bad reputation,† about 2½ hours from Kangal. A mile farther on the little Chamali Su must be forded, and three quarters of an hour later a direct road from Derende to the north is crossed, half an hour before reaching Manjulik. A wooden bridge leads across the Ginolu Su to the village, which straggles up a lateral *dere*. There are 120 houses, all Armenian. At the top of the village is an old church and monastery, well built, but in simple style. It was in Manjulik that we copied a little Greek sepulchral inscription, the only antiquity encountered between Gyurun and Sivas.

To the south and west of Manjulik stretches Uzun Yaila, an elevated tract of country, very sparsely inhabited, and haunted by predatory nomads, chiefly Circassians. It is traversed by cross-roads to Azizie, south-west, and to Tonos, north-west, whence Ainsworth reached Manjulik. The Gyurun *chaussée* runs straight across a level plateau for about an hour and a half, and then for an equal distance over uneven ground to Buyu Delik, a poor Turkish village nestling under steep crags. The road here enters on a barren upland. Two

* 'Hist. Geog.,' p. 275.

† Although not in Uzun Yaila, this district contains many Circassians, whose services to Turkey in the last Russian war are rewarded by a degree of immunity from official control which does not conduce to the safety of the roads. The inhabitants of Tirza Khan, however, are not Circassians, but Turkmans, described to us as "all robbers."

hours later the old horse-track diverges to the left, and offers a welcome short cut to Gyurun with the following stages:—1 hour 20 min., a watershed; 40 min., a bridge over a small stream at the bottom of a broad valley; 1 hour, a spring at the entrance to a rocky defile; 1 hour, Gyurun entered from the lower end of the long straggling township.

It is easy to recognise in Ainsworth's description of his ride from Manjulik to Gyurun the "black stony upland" at the beginning and the "narrow ravine" at the end; but the new *chaussée* seems to follow a different line from his road. At least, it is difficult to identify on the present route the pass "called by the Turks Sakal-i-Tutun."

The Roman roads of the whole of Central Cappadocia are in great confusion. I imagine that when the country is better surveyed and more sites are identified, it will be found that the Antonine Itinerary incorporates branch roads in main routes, much as a bungling clerk might incorporate the branch lines in the main lines of a modern railway tim -table.* For the present, as Professor Ramsay remarks, "the roads are too corrupt, and the localisation of every point too uncertain, to justify any scheme of reconstruction." There is much to be said, however, in favour of his own reconstruction† of the direct road from Arabissus to Sebastea, which must, he argues, have followed much the same route as that already described. The pass at Delikli Tash is a fixed point on a road running south-east, for the Terja Dagh precludes circumvention of it towards the east, and the situation of Kangal is admirably suited to Euspoena.

II.—*Sivas to Enderes and the upper Lycus Valley.*

Let us now return to Sivas, and make a fresh start eastwards along the north bank of the Halys to Enderes. The road, a new *chaussée*, in fairly good order, keeps the river valley, but at some distance from the river itself. The ground is mostly level, a bare and dry but fertile plain, broken by occasional knolls. Distant mountains close the view

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* For instance, the short road which appears as

a Cocuso	lii.
Ptandari.	xxviii.
Arabisso.	xxiiii.

ought to be read as

a Cocuso	
Ptandari . . .	xxviii.
Arabisso.	xxiiii.

the branch road to Ptandaris, situated at Tanir in the valley of the Khurman Su, diverging before Arabissus.

† 'Hist. Geog.,' pp. 274, 275.

on either side. There is a considerable timber traffic, and we noted that the harvest was being gathered with European pitchforks and rakes—a sign of the influence of the model farm recently founded at Sivas.

The road passes between two Armenian villages about three hours from Sivas, Hanza on the left and Boyudun on the right. An hour later it reaches Guvre, a very mean place, supplied only with brackish water. Here a low spur is crossed, and the road gradually approaches the river until at Koch Hissar (5271 feet: 24·80: 75°), five hours from Sivas, there intervenes less than a mile. Opposite to Koch Hissar a bold bluff projects from the end of a low ridge into the stream, and astride on the neck of this promontory is Kemis, a mixed village of 55 houses, which obviously preserves the name of the ancient Camisa, an important station and fortress on the road from Sebastea to Nicopolis. Except a splinter of column and some fragments of an old church, there are few traces of antiquity.

A wooden bridge crosses the Halys under the eastern face of the rock, and it is probable that there was an ancient bridge at about the same point; for, although there is no reason to suppose that the Roman road followed the south bank of the river rather than the north, and Koch Hissar, itself a strong position on a precipitous rise commanding the road, may claim to represent the more important part of Camisa, yet if Eumeis is really a corruption of Camisa (as the distance to Zara suggests), the direct road of the Itinerary from Arabissus to Nicopolis * seems to imply a bridge there. The military importance of the station also favours this hypothesis. The Halys is, however, easily fordable in summer on the other side of the rock.

Strabo (p. 560) mentions not only an old fort at Camisa, but also salt mines; and the presence of salt in the soil is attested by a series of small brackish lakes a little farther to the east. The road keeps along a low ridge between these lakes and the river, through undulating country partly under corn, but bare and treeless except about the villages. Of these the most prominent are Yarasa, an hour and a half from Koch Hissar, and Yenije, half-an-hour to the south-east, on the opposite side of the river. The road then descends to the Halys, and skirts its bank for some distance, passing the rickety wooden bridge whereby the track from Yenije crosses. There follows another piece of uneven ground, where the road again runs between salt lakes and the river, until it enters a long straight valley with high walls, which leads up to Zara.

Zara (5451 feet: 24·65: 76°) is reckoned 12 hours from Sivas. It is rather a little town than a village, with a small *bazar* and modern

* I do not understand why Professor Ramsay ('Hist. Geog.,' p. 275) doubts the existence of this road between Euspoena and Camisa.

church, and lies at the junction of a tributary stream from the north with the Halys. A new high road from Devrik, said to be 18 hours distant, here crosses the river on a long wooden bridge with stone piers. Zara still retains its ancient name, but we could hear of no antiquities except a fragmentary Greek inscription of late date and no importance, built into a corner of the church of an Armenian monastery, a mile outside the town.

We here leave the Halys and ascend the side valley to the north. A short cut over a ridge (6413 feet: 23·80) takes us in 2 hours 10 minutes to the roadside *khan* of Arabja Kupru, at the bottom of a wooded glen. The road, which is often bad and very heavy after a night's rain, although just practicable for an *araba*, enters a narrow gorge cut by the stream, and then climbs up steep slopes, through the pine forest to the watershed (5699 feet: 24·40) between the Kizil Irmak (Halys) and Tozanli Chai (Iris), reached in 3¼ hours from Zara. The hills are everywhere thickly clothed with pine trees, and much timber is felled for the Sivas market by savage-looking woodcutters, who cart it on bullock-arabas down to the Halys. A cool upland valley, inhabited by Greeks and Circassians, where the corn is still green in the middle of August, is succeeded by a long gradual descent to the head stream of the Iris, forded * two hours after crossing the summit. The stream bears away westwards down to the left, rapidly descending between beetling rocks amid luxuriant and varied woods and undergrowth. About an hour lower down in this beautiful valley is the hamlet of Istoshun, on a horse track to Tokat. Built into the chimney nook, one on each side of the fire, in an underground chamber of one of the houses, stand two large split columns, on the flat side of which are carved in relief a number of strange symbols, perhaps early Armenian.

The Enderes road, however, mounts the slope opposite the ford for a mile and a half to a khan (5945 feet: 24·10) over against Kechiut, which lies across a wide open dip to the left. In the village churchyard we found a Greek inscription, which seems to record a pious foundation or restoration by the Emperor Justinian.† The stone is said to have been brought from a place known as "the pointed hill" (Sivri Tepe) about three hours distant to the east. If this be true, Sivri Tepe may be the site of Dagalassos, on the direct road Zara-Nicopolis. The road continues round the hills to the watershed, between the Iris and the Lycus, reaching Dermen Tash in the Lycus valley in four hours; but there is a shorter horse-path from the back of the khan up a long ravine running nearly due east. The path is almost level as far as Gyusuk, (1 hour), a village of 80 houses with a large new church, inhabited

* The bridge has collapsed.

† To be published, with other inscriptions of this district, in a collected form shortly.

solely by Greeks who speak an indescribably corrupt dialect of Greek.* A mile to the right is Bazar Gyusuk, shared between Greeks and Kurds. The walls of the ravine are steep and bare, but the level land at the bottom is cultivated, and harvest was in progress on August 17th. From Gyusuk there is a gradual ascent for three quarters of an hour up a little stream to the edge of the Lycus valley, 6837 feet (23·45). The view which at this point bursts upon the traveller is a very fine one: at his feet the ground suddenly drops 1200 feet, on the right wooded spurs run up to the bare rock, and diagonally in front stretches the river-plain flanked by magnificent mountain barriers. A steep difficult descent leads down to a rivulet (5582 feet: 24·50) in 35 minutes, and thence the path winds over the roots of the hills to the Greek village of Dermen Tash (1 hour). Dermen Tash is 2½ hours from Enderes by the *chaussée*, but it may be worth while to keep up to the right of the road and visit Sis, an Armenian monastery, prettily situated on an upper slope (5447 feet: 24·65: 75°) among trees and gardens. The church seems to be of some antiquity, and is said to have been built by the Armenian king of Sivas, Sennacherim, in the 11th century. The monastery is spacious and well-kept, with a large entrance hall or refectory. It is the occasional residence of the bishop of the district, but is usually almost deserted. Rough cross-country tracks lead to Dermen Tash in two hours and Enderes in one and a half.

Enderes (4363 feet: 25·60: 74°) lies above the plain on the western edge of a deep gully. It is a pleasant little town of 800 houses, more than half of which are Turkish, well supplied with water, and surrounded by gardens and patches of real green turf. The Lycus valley is here broad, straight, and flat, although broken by occasional spurs and watercourses from the hills. The river keeps well to the northern edge of the plain, some distance from Enderes. An easy horse-road, fairly level except for a *dere* here and there, leads along the base of the hills eastwards to the Armenian village of Purk, about three miles from Enderes, on a fertile plateau. The considerable ancient remains at Purk would suffice, even without the evidence of inscriptions, to identify it with the Roman Nicopolis, founded by Pompey on the field of his victory over Mithridates, and thenceforward throughout antiquity the most important civil and strategic centre in this region. The highway from Pontus and northern Cappadocia to the Euphrates and Armenia lay through Nicopolis. It was here that the roads up the Lycus and up the Halys united. The modern routes from Zara direct to Devrik, over the Kara Bel, and from Trebizond to Erzerum were not then developed. The military roads up the Euphrates, and from Trapezus, the naval station of the Roman Black Sea fleet, and the

* See part i., p. 650.

stativa of Legio I. Pontica, met at Satala, the headquarters of Legio XV. Apollinaris, higher up the Lycus valley, and were continued westwards only through Nicopolis.

The ancient site is of an oblong shape, and projects to the north of the modern village. The whole north wall, and the northern half of the east and west walls, are easily traced by their rubble and cement core. Here and there a few courses of the stone casing remain, and, at the north-east angle, a considerable fragment of a square tower is still standing. It is, perhaps, not impossible that the name Purk is a corruption of Πύργος, and the legend recounted by Boré* an etymological fiction attached to a survival of a Pagan festival. The north wall, a short side of the oblong, must be about a quarter of a mile long. The enclosed space, as far as the village, is cultivated as a vegetable garden. In the village, many fine, squared blocks of marble, caps, fragments of cornice, etc., are to be seen built into the houses. Inscriptions are less numerous than might be expected; we found only three Greek epitaphs and a Latin fragment. Boré's inscription,† which names Nicopolis, seems to have disappeared or been forgotten. On the top of the hill overhanging the village, lies a broken sepulchral *stele*, a bust in relief of a Roman lady, over a panel which has never been inscribed.

Twenty-two minutes east of Purk is another village, on a steep, rocky spur projecting into a small ravine, and easily approached only from the south-east. The topmost crag forms an acropolis of great natural strength, which has evidently been fortified, and still displays vestiges of a stepped ascent and a cistern on the summit. The superior defensive position and the name of this village, Eski Sheher, *i.e.* Old Town, suggest that the original settlement must have been here and not at Purk, but transplanted to the latter site either by Pompey or at a subsequent date. That the supposed transference was later than Pompey's foundation is a view perhaps favoured by Hirtius' description ‡ of the second battle of Nicopolis, in which Pharnaces defeated Caesar's lieutenant, Domitius Calvinus. Domitius seems to have marched along the hills, past Nicopolis, and encamped near Ashkhar, in the narrow valley described below, whence he descended to attack the enemy under the walls of the town. Pharnaces, seeing that the attack must come from the south-east, prepared the ground by digging trenches across the exposed level. The 36th legion penetrated round the trenches to the eastern wall of Nicopolis, and, after the defeat, withdrew to the roots of the hills, and finally retired up the Ashkhar road to the Halys and Cappadocia. The site of Eski Sheher seems to fit this description better than the more open

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* Quoted in Ritter's 'Erdkunde,' xviii., p. 214. The festival of the Nicotimia, if genuine, is particularly interesting.

† *Ibid.* τῇ λαμπροτάτῃ βουλῇ καὶ τῷ κρατίστῳ δήμῳ Ἀδριάνης Νικοπόλεως.

‡ 'De bello Alexandrino,' 36–40; *cf.* also the Ἀδριάνης of the inscription.

position of Purk. In the cemetery of the village we copied a Greek sepulchral inscription.

A mile and a half beyond Eski Sheher, after passing below the hamlet of Jausli, the little river Ulu Chai is reached, and crossed by a wooden bridge. It is an affluent of the Lycus, and flows down a narrow defile from the southern hills. Up the right bank runs an easy horse-road to the small village of Ashkhar, or Aksheherabad (4478 feet : 25·50 : 74°) whence it crosses to the upper valley of the Halys, and reaches Zara in twelve hours. This road is in common use by travellers between Kara Hissar and Sivas who wish to avoid the *détour* by Enderes.

It is certain that the Roman road from Nicopolis to Sebastea took the same course. The wanderings of the stream and landslips from the steep earthy slopes have indeed almost obliterated all traces of it, but its line may still be marked by an attentive eye in one or two places, and in a garden hedge at Ashkhar lies a milestone with the following inscription :—

IMP	Imp.
CAESARIDIVITRAIA	Caesari divi Traia-
NIPARTHICIFDIVINER	ni Parthici f. divi Ner-
VAENEPOTITRAIANO	vae nepoti Traiano
HADRIANOAVGPM	Hadriano aug. p. m.
TRIBPOTXIIICOSIIIPP	trib. pot. xiii. cos. iii. p. p.
CIVITASNICOPOLITA	Civitas Nicopolita
NOR	nor(um)
MP	MP
VII	VII
Z	Z

Ashkhar is just about seven Roman miles from Purk. The stone is reported to have been found in the bed of the stream immediately below the village, near the point where there is a fragment of masonry which may possibly have been the abutment of a bridge. The red colour in the letters, however, is as fresh as the day they were painted. Possibly the stone was buried, and washed out by the stream.

Both at Enderes and at Purk we were told of ancient remains at Sushar, about 13 hours—say 40 miles—farther east, up the Lycus valley. There was some difference of statement as to the precise locality, and Sushar seems to be a wide term for a whole district; but no doubt these ruins, wherever they are, represent the Roman Satala, which Kiepert, on the strength of the similarity of the names, has conjecturally identified with Sadagh. Sadagh, however, if the maps may be trusted, is rather too far east, and the place most frequently mentioned to us was Jelat, said to be near some mines on an unfinished road to Erzinjian, where there are reported to be two written rocks or stones. But Satala lay beyond the scope of our tour, and must be reserved for another expedition.

III.—*Down the Lycus from Enderes to Niksar.*

The Lycus is known either as the Germili Chai or as the Kalkid Irmak. Germili or Germeri, Kalkid or Kerkit, are places near the source of the main or southern stream, which unites with the northern branch a little below Kara Hissar. In the name Kalkid has been plausibly recognised a corruption of the Armenian Kail Kyed = Wolf river = Lycus.* If this identification is correct it is difficult to decide whether the Greek name or the Armenian is the earlier.

From the junction of the two streams down to Enderes, the Lycus valley is broad and open, but just below that point contracts to a narrow defile, and except for a momentary expansion at Koilu Hissar, nowhere opens out to more than half a mile's breadth until the plain of Niksar is reached. The course of the river is fairly direct, but a large section is represented only by a dotted line on the maps, and the region traversed is little known or explored. It is a rough hilly country clothed with pine forest; on the left is the ridge of wooded heights which divides the valleys of the Lycus and Iris. It must have been along this ridge that Domitius Calvinus advanced from Comana Pontica to Nicopolis, keeping the hills for fear of sudden attacks from the enemy's cavalry.†

To the right stretches the rugged tract which Strabo seems to regard as a continuation or part of the Paryadres Range, and speaks of as dotted with scarcely accessible fortresses, wherein Mithridates stored his treasure.

The Lycus, as has been mentioned, runs along the side of the valley opposite to Enderes, close under the northern mountains. The road to Koilu Hissar, gradually descending, strikes across to the mouth of the gorge at the north-east corner of the plain. The actual river-channel is at length reached by a sharp descent over steep earth-slopes near the junction of a tributary stream, two hours out of Enderes. There is a road on each side of the river; the usual route from Enderes, which is followed by the telegraph wires, keeps to the left bank, but the horse and post-road from Kara Hissar, often a mere track, skirts the right bank.‡ We cross to the latter 40 minutes lower down, at Aiyas, a cluster of a dozen Turkish houses among gardens. The level of the river is here 3065 feet (26·80) above the sea. The ford is only practicable when the water is low, for the Lycus is already a large stream, turbid and rapid, with a breadth of about 50 yards. A mile below the ford are vestiges of a large village, possibly Byzantine. The steep walls of the

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* *Vide* Ritter's 'Erdkunde,' xviii., p. 201.

† 'De bello Alexandrino,' 35.

‡ See for a rather exaggerated description of this road, Ker-Porter's 'Travels,' vol. ii. pp. 688, *ff.*

ravine then draw together, and the road becomes difficult in places. The river has evidently wandered to and fro, and brought down avalanches of earth first from one side, then from the other. There is plenty of undergrowth, but not much timber except on the heights. Two hours from the ruined village there comes in sight the picturesque mediæval castle of Koilu Hissar, which crowns a group of lofty pinnacles of rock overhanging the right bank. The colour of the rocks is very striking—a brilliant yellow streaked with red. The precipitous cliffs are inaccessible from this side, and although the castle is so near, there is a long circuit to be made before reaching Koilu Hissar. First we ride through a series of fruit gardens, then a mile after passing the castle the ravine opens out, and we emerge upon a broad new *chaussée*—the high-road from Sivas to the port of Ordu, which diverges from the Enderes road near Kechiut, and here crosses the Lycus on a covered wooden bridge with stone piers. The distance to Kechiut is reckoned six hours from this point. The *chaussée* presently turns up a valley to the right, and ascends steadily to the *café* and small *bazar* of Koilu Hissar, 65 minutes from the bridge. The town is much scattered, straggling up the glen for several miles among trees and gardens. There are said to be three or four hundred houses. Melet, the capital of the *sanjak*, is reckoned six hours distant, and Ordu twenty-four. A stone carved with three crosses, doubtless a lintel from a church door, seems to be the oldest object in the place. The town as a whole wears a look of recent prosperity, and has probably benefited by the new highway.

The ordinary, and no doubt better, road from Koilu Hissar to Niksar is through Melet and across the hills, but there is also a horse-track down the Lycus, which is here described.

From the *café* we descend again, cross a bridge over a rivulet to the other side of the glen, and reach the Lycus in 50 minutes. About three quarters of a mile lower down, the valley is almost blocked by a great rock, which juts out from the hills on the right. On the top is a mosque and holy tomb, but there are clear traces of an old fortress visible from below, which is known as Asha Kale = the Lower Castle.* The base of the rock is washed by the swirling current, and the opposite bank is a precipitous bluff. The path has to be carried round the point by cutting, and abruptly crosses the river on a new bridge to the lower land behind the bluff, where there is a deserted *khan*, a strong loopholed building. Asha Kale must always have been an important position; it is certainly the most striking and defensible point in the whole middle course of the Lycus. Probably this lower castle was meant to guard the river road, Koilu Hissar the hill road, the two forming complementary parts in one scheme of defence.

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* Noticed by Ouseley from Koilu Hissar. Ritter, *op. cit.*, p. 218.

So far there is some attempt at a made road, and the new bridge seems to indicate an intention to develop the river route; but below Asha Kale there is only a track, and that steadily grows worse. The scenery is pretty, even beautiful in places; as, for instance, where the rapid river rushes round some projecting spur. The pine forest descends to the foot of the slopes on each side, and the river banks are green with grass. Villages occur at intervals. Three hours from Koilu Hissar and a mile from the Lycus, up a *dere* to the left, is Gweba, a settlement of *Kizilbash* (*i.e.* heretic Mussulmans) (3170 feet: 26·70). Opposite on the right bank is Eksi, a Mussulman village, and two miles lower down Mudasu, on the left bank, whence there is a cross-path to the Iris valley and Tokat.

Both at Gweba and elsewhere we found the Kizilbash most hospitable and friendly to strangers. There are five or six villages of these heretics, who are not Kurds, but aborigines to all appearance. They are almost completely ignorant of the world outside, and their agricultural implements are of an extremely primitive character. It is probable that they represent the dying remnant of an original population of the valley never thoroughly converted to Islam. They have the delicate facial type and timid manner which one associates naturally with a worn-out race. It was in the heretic villages that we first observed a curious form of araba without wheels. The back ends of the poles are bent round under the cart, and form runners, upon which it rests like an elevated sledge, thus avoiding the difficulties of the rough ground.

After Mudasu the road becomes difficult, often climbing the steep earth slopes to avoid bends of the river. An hour below the village the level of the water is 2530 feet (27·30) above the sea, and half an hour farther down Alama is passed—a Turkish village on the other bank. Yet another hour and a half and the road crosses a bridge to Kundu, a group of wooden cabins among gardens belonging to the village of Taurla, which lies higher up in the hills. Near this place we first encountered traces of an ancient road. Twelve minutes above the bridge of Taurla (2485 feet: 27·35 : 80°) there stands a fragment of a Roman bridge finely cased with masonry. It is the abutment on the right bank, to which the road must have crossed at this point. Below Kundu, after a slight rise has been surmounted, the dyke of the ancient road is traceable at intervals for about an hour, and reappears for a moment even farther down; but for the most part it has been undermined and swept away by the ever-changing curves of the river. Enough, however, remains to prove that there must have been a Roman road up the Lycus from Neocaesarea to Nicopolis.

The modern track runs, now across bare flats, now through low bushes, here on the strand, there up the bank, but grows ever fainter

and fainter. Two hours and three quarters from the bridge a few shepherds' huts and folds are reached, not far from Chal Dere, which lies on the other (left) bank. Our guide had long been beyond his knowledge, and the path was here reported to be so difficult, and the valley so sparsely inhabited, that we thought well to leave the Lycus and turn up into the hills to the right.

A fairly good horse-road was soon hit upon, which led to a Turkish village—Bardakli—50 minutes from the Lycus valley. The upland slopes, back from the river, are to a large extent cleared and cultivated, and are thickly dotted with hamlets and villages. Half an hour to the west of Bardakli is Kara Tash, and at the same distance to the north lies Maghodun (Turkish), evidently an old village, dominated by a ruinous fortress. Twenty minutes beyond Maghodun a summit is crossed, and a short abrupt descent leads down into a most beautiful little glen. Lofty cliffs and towering heights close in the upper end, a bright lake lies in the hollow, and mirrors the rock and foliage of the steeps on both sides, which are clothed with a dense growth of oak, cherry, and other trees, and through the dainty green meadow above the lake dances a clear brook crossed by a rustic wooden bridge. It is a view that, after the monotonous pines and scrub and dreary yellow earth-banks of the latter part of the Lycus valley, has a singular charm, even at the close of a long day's ride.

We pass the bridge and mount the other slope to Zina (4769 feet: 25·20 : 66°), a Turkish village on an open grassy hillside commanding an extensive view across the cleft of the Lycus. We lost our way and some time in the wood; but Zina cannot be more than an hour from Maghodun. It was a welcome surprise, and pleasant indication of the comfortable rural life sometimes latent in an out-of-the-way Turkish village, to find ourselves sumptuously entertained in a handsome panelled room, the fittings and decoration of which were both rich and tasteful. Several villages, or rather groups of *chalets* (for one name is given to huts spaced widely over two or three square miles), are within view from Zina to the south or south-west: Tinia Bagh half an hour lower down the hill, Yenishe more remote, on the opposite side of the Lycus, and others. The whole upland country is pretty—cornfields and pasture interspersed among woods and rocks, and sprinkled with clusters of wood *chalets*.

Leaving this region, the road—which, although not metalled and rather narrow, is practicable for rough wheeled traffic—winds down round wooded hills and through cultivated valleys to the brink of the Niksar plain. On emerging from a thick pine-forest near Zina there is a rapid descent; but this fall is partially recovered by an ascent to Uljak (4155 feet: 25·80), three hours and a half from Zina. Thence there is a rough drop by a short cut to Tenevli (2642 feet : 27·20 : 79°), a group of log-huts and gardens about an hour and a quarter beyond

Uljak. But the araba road avoids Tenevli, and pursues a more level course along the hillside. Tonevli to Niksar is nearly two hours. There is nothing to note on the way except the steep descent at the end, where the road is paved in places.

Niksar (2070 feet above the sea: 27·75 : 84°) lies in a fold of the hills opening from the north-east on to the broad flat plain through which the Lycus flows after emerging from the forest ranges. The situation is striking. In the middle of the grassy ravine, and mounting upwards towards its head, rises a rocky crest, which formed the acropolis of Neocaesarea. It is crowned by a ruined castle of great extent and strength. Most of the building seems to be not earlier than the Byzantine period, but there is one hexagonal tower of good Roman masonry near the western extremity of the citadel. The northern side of the ridge is precipitous, but the whole of the steep southern slope is included in the outermost wall of defence. Against this outer wall is picturesquely planted the main street of the modern town, divided from a large outlying quarter by the stream at the bottom of the valley. From the modern bridge may be discerned remains of an older structure a little farther down, and on the outskirts of the town are several ruined buildings, a series of rubble arches, and a Seljuk gate and tomb. The houses are of wood and stone mixed; the flat mud roofs of the interior here give place to the sloping tiles characteristic of the northern towns. There are two very late reliefs built into the wall of the *konak*, and local tradition tells of written stones taken to Stambul; but we failed to find any inscriptions.

Neocaesarea is mentioned by Pliny ('Nat. Hist.' vi. 3), but unknown to Strabo, to whom the principal town of this district was Cabira. Cabira was a royal residence of Mithridates, refounded by Pompey as Diospolis, and afterwards named Sebaste by Pythodoris.* The suggestion of Mannert and Hamilton that Cabira-Diospolis-Sebaste is to be identified with Neocaesarea is extremely probable. Cabira was about twenty miles south and east of the junction of the Lycus and Iris, at the eastern extremity of the plain of Phanaroea (Strabo, p. 556), on the way to Armenia, near the Lycus, and on the right bank, for Mithridates crosses the river into the plain (Tash Ova) when he advances against Lucullus (Plut. 'Luc.' 14, 15), and not far from Comana, whither he retires after his defeat (Appian, 'Mithr.,' 683, 82). No situation has been suggested which better fulfils all these conditions than Niksar.

IV.—*Niksar to Tokat.*

Niksar is about two miles from the Lycus. The plain is marshy, and grows quantities of maize, rice, etc. The river flows in several

* Strabo, 556–557.

streams down a very wide bed; it must come down in great volume when swollen by the melting of the winter snows. The height above the sea is here 1393 feet (28·40). A bridge, which cannot be less than 300 yards long, with stone piers and a crazy wooden superstructure, carries the road to the opposite bank. Thence it is an hour's ride to Duneksa, at the foot of the hills, so the Lycus plain must be at least five miles broad. On the slopes about Duneksa much tobacco is cultivated. From this point the road, a highway in excellent order, ascends a wooded valley for nearly an hour to an elevated plateau, on which it passes between the villages of Oktap (3280 feet: 26·60), 70 minutes from Duneksa, on the right, and Almush, on the left, half an hour farther on. Ten minutes beyond the latter village the watershed is reached—3489 feet (26·40)—and there follows an easy descent of three quarters of an hour to the Iris valley. The new *chaussée* runs straight on, keeping a couple of miles to the right of the river, and crosses a nick in the ridge of Karakaia, which bars the valley half an hour lower down. We preferred to strike off to the right to join the old horse-road at Omala, where the Iris, coming down from Kechiut,* issues from the hills.

At Omala we found and copied several inscriptions, a couple of Greek tombstones, and the two following fragments of Roman milestones:—

(i.)	IM	. . . .
	. AXIM	m]axim-
	. . AVGPR	us] aug. (t)r-
	. . . NICIAE	ibu]niciae
	. . . ESTATI.	pote]stati[s
	. . AMPES	vi]am [r]es-
	. . . VI. . . .	tit]ui[t per

(ii.)

(1.) On a stone, much broken, in the stable of Ibrahim Effendi.

. . . . .	[Impp. Caess.]
. . . RVAL. . . .	C. Au]r. Val[erio
DIOCLETIANO	Diocletiano

(2.) On the back of the same stone: the upper lines are confused by a superscribed text. The stone was in the darkest corner of a stable, lighted only by a door; and it was quite impossible to unravel the tangle of letters under the circumstances. The superscribed text does not seem to be an imperial formula at all.

* V. *supra*, p. 726.

C I- . . . . . HUATI	. . . . .
A . . . . . PAPE	. . . . .
NV . . . P . AESTIURCO	. . . Im]p. [C]aes. (Fl). V(a). Co[n-
S . . N . . N . . ICTORIAC	s[ta]n[ti]n[o v]ictori ac
. RIUMFSEMPERAUG	t]riumf. semper aug.
ETFLCLCONSTANTIO	et Fl. Cl. Constanti[n]o
. . . . IULCONSTANTIO	et Fl.] Jul. Constantio
. . . . .	[et Fl. Jul. Constanti]
. . . . .	[nobb. Caess. etc.].

There can be little doubt that the stones belong to the ancient road from Comana to Neocaesarea, which must therefore have taken the same course as the Turkish horse-road, not the new *chaussée*. The possibility of a direct Roman road from Comana to Nicopolis up the Iris is not perhaps entirely excluded, but is scarcely probable; for not only is the Lycus route easier, avoiding the high pass at Kechiut, but we have also found independent evidence of a road up the Lycus valley, and a second at so short an interval seems superfluous.

Between Omala and Gumenek, the site of Comana Pontica, we discovered no more traces of the Roman road, unless the cuttings, whereby the point of the Karakaia ridge is rounded close above the waters of the Iris, may be counted as such. But beyond question the ancient road kept down the river and round this point. The horse-road rejoins the *chaussée* about two miles short of Gumenek, near the hamlet of Kizil Koi. The total distance from Omala to Gumenek is about two hours and a half; from Gumenek to Tokat one hour and a half.

The river below Karakaia winds through a wide open plain, until at Gumenek (2743 feet: 27·10) it once more approaches the hills on the left. At this point a low hillock, about half a mile in circumference, rises from the right bank. It is covered with the *débris* of buildings, squared stones, rubble walls, blocks of marble, and fragments of columns, the wreck of the great temple. At the base on the river-side are the abutments of a Roman bridge,* and a few yards higher up is the new bridge, into which are built fragments of an inscription that makes mention of ἡ Ἱεροκαισαρέων Κομανέων πόλις.†

The remains of buildings extend over the level to the east of the hillock, but nothing is standing except two ruinous structures, both of them very late work, and the larger probably an old *khan*.‡ The

* So lately as the year 1836, the two extreme arches of this bridge were still perfect; *vide* Hamilton, i., p. 350. Here, as on the Halys above Sivas, quantities of pine logs are floated down the Iris from the hills.

† *Cf.* 'Journal of Philology,' 1882, p. 152.

‡ *Cf.* Hamilton, 'Researches,' vol. i., p. 349.

temple mound itself is deeply buried in rubble of the same character; and as there are no villages in the vicinity, but only a few scattered farms, and the distance to Tokat is not inconsiderable, the ruins have never been exploited to any extent, but ought to yield a good result to the excavator. A mile or so to the west, on the right hand, is an old chapel or tomb, possibly the ancient tomb described by Hamilton ('Researches,' vol. i., p. 350), but we had no time to visit it. The road to Tokat (2530 feet : 27·30 : 76°) after crossing the bridge keeps to the left of the river along the base of the hills.

V.—*Sivas to Samsun.*

At Tokat we come upon the great road from Sivas to Samsun, which is as well known as any in Asiatic Turkey, and need not be again described in detail. One or two points may, however, be briefly noticed in connection with the ancient roads and sites in this region. The road comes over the Chamli Bel from Sivas to Tokat, but that this route is older than the growth of the latter town to importance seems to require proof. Professor Ramsay * adduces evidence of the road from Amasia to Comana, but no hint of a road from Comana to Sebastea except the conjectural identification of Verisa and Bolus. When Strabo (559) speaks of Comana as *ἐμπόριον τοῖς ἀπὸ τῆς Ἀρμενίας ἀξιόλογον*, he is evidently thinking of a connection through Nicopolis, not Sebastea. May not the traffic from Sebastea have been satisfied with the equally direct route through Sebastopolis and Zela to Amasia? It would do no harm to shift Verisa a little farther west. At any rate, until there is some further evidence of a Roman road over the Chamli Bel, it is safer to connect the milestones of Tokat—both that copied by Boré ('C. I. L.,' iii. 307), and the following almost illegible fragment found by us in the great square at the lower end of the town—not with a problematical road to Sebastea, but with the road to Comana and Neocaesarea, and the milestones at Omala. The inscription runs :—

	[Imp. Caes. C. Aur. Val.]
	[Diocletiano et]
IMP.....	Imp. [Caes. M. Aur. Val.
MAXIM..S.A...	Maxim[iano pp. ff.
INV.C.VGC..ESAV	inv[i]c. [A]ugg. [et Fl]av.
...CONSTANTI.	Val.] Constanti[o
ETCAL.PVA.	et Gal[er.] Va[l.
....IA.....	Maxim]ia[no nobb. Caess.

* 'Hist. Geog.,' p. 262.

From Tokat the road follows the broad grassy valley of the Iris to Turkhal. The identification of Gazioura with Turkhal seems almost certain. Strabo (547) says that the Iris, after flowing westwards through the rich plain of Dazimonitis (Kaz Ova), *εἶτ' ἐπιστρέφει πρὸς τὰς ἄρκτους παρ' αὐτὰ τὰ Γαζίουρα, παλαιὸν βασίλειον, νῦν δ' ἔρημον.* Turkhal with its castled crag exactly suits the description, and there are several rock-cut panels with Greek inscriptions, the lettering of which appears to be pre-Roman. Moreover, between Tokat and Turkhal we found an inscription of the Emperor Maurice, which proves that an Imperial estate lay in the Kaz Ova, doubtless an old royal domain, which had descended from the priestly rulers of Comana first to the kings of Pontus and then to the Roman emperors, and was connected with the royal castle of Gazioura.* Professor Ramsay† has fixed Ibora at Turkhal. The ruined Gazioura may well have revived as Ibora. Can the syllable Gaz- be a separable prefix preserved in the modern 'Kaz,' and Ibora equivalent to -ioura?‡

Perhaps it is worth while noting that we were told of ancient remains at Cham Koi, two hours south of Turkhal, on the Tokat-Zela road, which never crosses the Iris, but keeps to the left bank.

Below Turkhal the road leaves the Iris and strikes across the Chengel Dere Pass to Ine Bazar (2880 feet: 27·00 : 87°). It does not rejoin the river till near Amasia. From Amasia there is a choice of routes. The new *chaussée* runs straight to Kavsa, but it is possible to make a *détour* either to the left through Marsivan to Kavsa, or to the right through Ladik and Ahmed Serai, to rejoin the *chaussée* short of Kavak. Now, at Kavsa we found three Roman milestones; the first two are said to have been recently found near the stream just above the town, and now lie in the courtyard of the Serai; the third we dug out of the hillside to the left of the main street. The inscriptions are:—

(i.)	IMP A (*sic*)	Imp
	NFRVAE (*sic*)	Nervae
	CAESARI	Caesari
	AVG-	aug.
	PONTIE (*sic*)	ponti(f).
	MAXIM-	maxim.
	TRIBPOT	trib. pot.
	PA⅂RI-P-P (*sic*)	patri p. <p>.
	COSIII	cos. iii.
	XVI IF	xvi. ιϛ'

* The inscription runs: + *Ὅροι τ[ῶ]ν θεωφυλάκ[των] ἡμῶν δεσποτῶν* [Τιβ.] Φλ[α.] *Μαυρικίο[υ καὶ] Θεοδωσίο[υ κρα]τα[ίων αἰωνί]ω[ν αὐγούστων κ.τ.λ.*

† 'Hist. Geog.,' pp. 326–328.

‡ For Ioura = Ibora, *cf.* Oura = Ourba = Olba, 'Hist. Geog.,' p. 22. For Gaz = Turkish Kaz (goose), *cf.* Amorion = Hadji Omar Ova. *Ibid.*, p. 230.

(ii.)	IMP	Imp.
	CAESA.DIVI	Caesa[ri] divi
	TRAIANIPAR.	Traiani Par(thici)
	FII.DIVI.NERVA	fi(l). divi Nerva(e)
	NEPOTITRAIANO	nepoti Traiano
	ADRIANO.AVG.PON	Adriano aug. pon(tifici)
	MAXI.TRIB.POT.	maxi[mo] trib. pot.
	VI.COS.III	vi. cos. iii.
	ΑΥΤΟΚ.ΚΑΙΣΑΡΙ	Αὐτοκ(ράτορι) Καίσαρι
	ΘΕΟΥΤΡΑΙΑΝΟΥ	θεοῦ Τραιανοῦ
	ΠΑΡ.ΥΙΩ.ΘΕΟΥ	Παρ(θικοῦ) υἱῷ θεοῦ
	ΝΕΡΟΥΑΥΙΩΝΩΤΡΑ	Νερουᾶ υἱωνῷ Τρα-
	ΙΑΝΩΑΔΡΙΑΝΩΣΕΒ (*sic*)	ιανῷ Ἀδριανῷ σεβ(αστῷ)
	ΑΡΧΙ.ΜΕΓ.ΔΗΜΑΡΧ (*sic*)	ἀρχι(ερεῖ) μεγ(ίστῳ) δημαρχ(ικῆς)
	ΕΞΟΥ.ΤΟ.Ϛ.ΥΠΑ	ἐξου(σίας) τὸ ϛ' ὑπά(τῳ)
	ΤΟ.Γ.ΜΙ XVI	τὸ γ' Mi. xvi.
	IF	ιϛ'.
(iii.)	IMP	Imp.
	NERVAE	Nervae
	CAESARI	Caesari
	AVGPON	aug. pon-
	TIFICIMA	tifici ma-
	XIMTRIBV	xim. tribu-
	NICIAPOTES	nicia potes-
	TATE ATRIP	tate [p]atri p-
		[atriæ] . . . . .

(No more is legible, and the stone is broken below.)

Two questions have to be decided: In the first place, what is the *caput viae;* and, secondly, what is the direction of the road. Evidently the road came down the little side valley in which Kavsa is situated, either from Marsivan to the south-west, or from Vezir Kupru to the north-west. Both these towns are important knots in the network of roads; both are reputed ancient sites; both are reckoned five hours from Kavsa, and would fit the 16 Roman miles of the stones. To the east, on the other hand, no suitable site can be found; and the milestone of Diocletian numbered 23, which was copied by Professor Ramsay* at Ahmed Serai, and clearly belongs to the same road, is enough to prove that the road ran from west to east, not *vice versâ.* It is difficult to decide between Marsivan and Vezir Kupru without further exploration; but the claims of the latter seem at present rather the stronger. Both places are in immediate communication with the direct Ismid and Stambul road through Osmanjik; and the northern road from Tash

* 'Journal of Philology,' 1882, p. 156; 'C. I. L.,' iii., suppl., 6895.

Kupru and Sinob to Vezir Kupru may be set against the southern road from Chorum to Marsivan. But Marsivan seems never to have had the importance of a *caput viae*, for ancient remains are scarcely to be found there. Further, the *modern* road from Marsivan to Kavsa coincides for some miles with that from Amasia; and we saw no ancient traces upon that section. There is, on the other hand, evidence to connect Vezir Kupru with an important city. Considerable relics of antiquity were observed there by Hamilton and Ainsworth, and Sir Charles Wilson * was informed that a Roman bridge still exists there.

Now, there can be little doubt that the hot baths of Kavsa, which are still frequented, represent the *θερμὰ ὕδατα τῶν Φαζημονιτῶν* (Strabo, 560). Marsivan has been generally accepted as the site of Phazemon itself. But if Vezir Kupru be preferred for the *caput viae*, it is probably to be identified with Phazemon, where Pompey established his colony Neapolis. Andrapa Neo-Claudiopolis, the only alternative which suggests itself, seems rather to have lain to the west of the Halys.

There remains the question of the destination of the road. Did it continue eastward to Eupatoria-Magnopolis and Neocaesarea, as Sir Charles Wilson suggested, or turn northwards to Amisus? Possibly it may be proved that both these roads existed; but, at all events, there is already clear evidence of the latter. The milestone at Ahmed Serai is not, indeed, conclusive, for it must have been carried.† But between Kavsa and Kavak the Roman road may be plainly traced on the high ground for more than two hours (in some places ‡ even the pavement is preserved intact); and at Kavak we found a small late milestone in a cemetery in the middle of the village. The inscription, which has either been added to by later scribbling, or superinscribed on an imperfectly obliterated monument, is as follows :—

DDNN N
CONSTANTINO'AvGSF[illegible]AL
VENERANDAEMEMORIAEAVG
IMPCAESFLL
CONSTAVTIO G ET
PFSEMPAVG SAbJ
IMPCAESFLIVL
CONSTANTEPFAVGAVG
FLACHILIVS

* Quoted by Prof. Ramsay, 'Journ. of Phil.,' *loc. cit.*

† According to Prof. Ramsay's information Ahmed Serai is four hours from Kavsa, whereas the stone is the seventh from those copied by us. Three hours, however, is a fairer estimate of the distance from Kavsa.

‡ *E.g.* near a guard-house to the left of the modern road it is particularly well preserved.

D(ominis) n(ostris) [Imp. Caes.*
Constantino aug. (p.) f. <au[g. (?)>
venerandae memoriae <aug.>
Imp. Caes. Fl. (J)[ulio
Consta(n)tio [au]g. <et>
p. f. semp(er) aug. . . . .
Imp. Caes. Fl. Jul.
Constant(i) p. f. aug. <aug.>
Fl. Achilius . . . . . .

This inscription presents remarkable features. It has evidently been altered in part after the death of Constantine II., and the words "venerandae memoriae" cut in a space where "victori ac triumfatori" (or some such formula) had been erased. The constant repetition of "aug." is probably the work of a scribbler, for the words on the extreme right appeared to be mere scratches. Flavius Achilius is perhaps a new governor of Cappadocia to be added to the list on p. 708.

Beyond Kavak we found no more traces of the road. The suggestion may be hazarded that it kept down the valley of the Merd Irmak, instead of following the line of the modern *chaussée*, which winds over the ridges to the left of the river.

There is, however, no necessary connection between the milestones at Kavsa and this road to Amisus, for the continuation of the road through Kavsa eastwards to the Lycus is quite probable *à priori*, and it is tempting to see in Pompey's colonies, Pompeiopolis, Neapolis, Magnopolis, Diospolis, and Nicopolis, a series of stations on a great trunk road through Bithynia and Pontus.

---

* Possibly this ought to have been copied D]D D N N N = D(ominis) n(ostris tribus), as Mr. Haverfield suggests. Prof. Mommsen suggests that lines 2 and 3 ought to be read

Constantino aug[u]s(t.) ac
venerandae memoriae Aug.

Konia
Ak Shehr
Karaja Dagh
Urfa
Harran
Mahr Belikh
R. Euphrates
R. Khabur
Ras-el-Ain
Suwerek
Sumeat
Kaisariyeh
Kara Hissar
Erzingan
Erzerum
Kara Kilisse
Yenikoi
Kara Yazi
Sultan Dagh
Boz Dagh
Ak Dagh
Sivri
Kizil Ozan
Kizil Irmak
Sakaria
Sarajik
Kizil Dagh
Ak Dagh
Kizil Dagh
Ak Dagh
Kizil Dagh
Ak Dagh

Drawn by W. Shawe, F.R.G.S.

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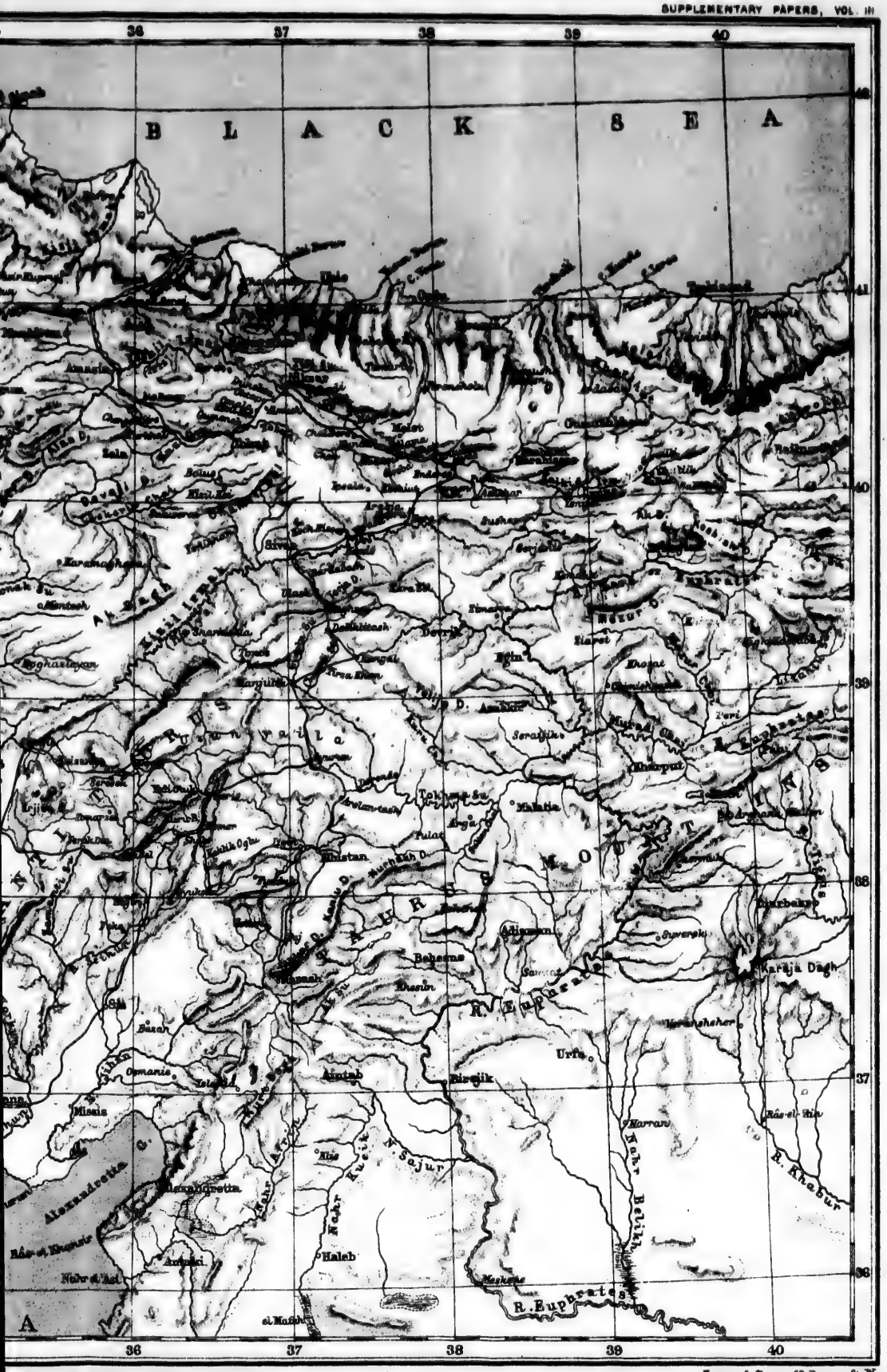
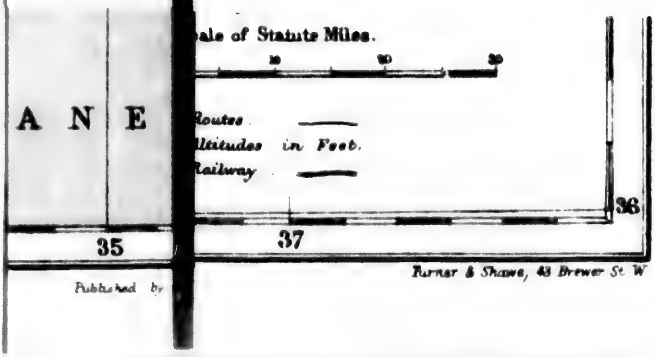

BLACK SEA
Erzerum
Erzingan
Kharput
Mezur
Diarbekr
Karaja Dagh
Urfa
Birejik
Harran
Ras-el-Ain
R. Khabur
Nehr Belikh
Nehr Sajur
Nehr Kuweik
Aintab
Haleb
Antakia
Alexandretta
Ras el Khanzir
Nahr el Asi
Osmanie
Missis
Bahesna
Adiaman
Samsat
Kahta
Malatia
Tokhma Su
Ergani
Tulac
Hadjeni
Sivas
Tokat
Amasia
Zara
Kara Hissar
Karahisar
Ak Dagh
Kizil Irmak
Yozgat
Boghazlayan
Kastamuni
Sinop
Trebizond
Ordu
Giresun
Samsun
Ismid
Eski Shehr
Angora
Kutahia
Afyon
Ak Shehr
Konia
Karaman
Tarsus
Adana
Sis
Baian
Bozanti
Eregli
Ak Sarai
Kaisarieh
Tomarza
Develi
Bor
Niksar
Tokat
Zile
Ak Hissar
Sarajlu
Kara Su
Kara Hissar
Kara Su
Kara Su
Kara Su

A


ale of Statute Miles.
10
20
30
A N E
Routes
ltitudes in Feet.
Railway
36
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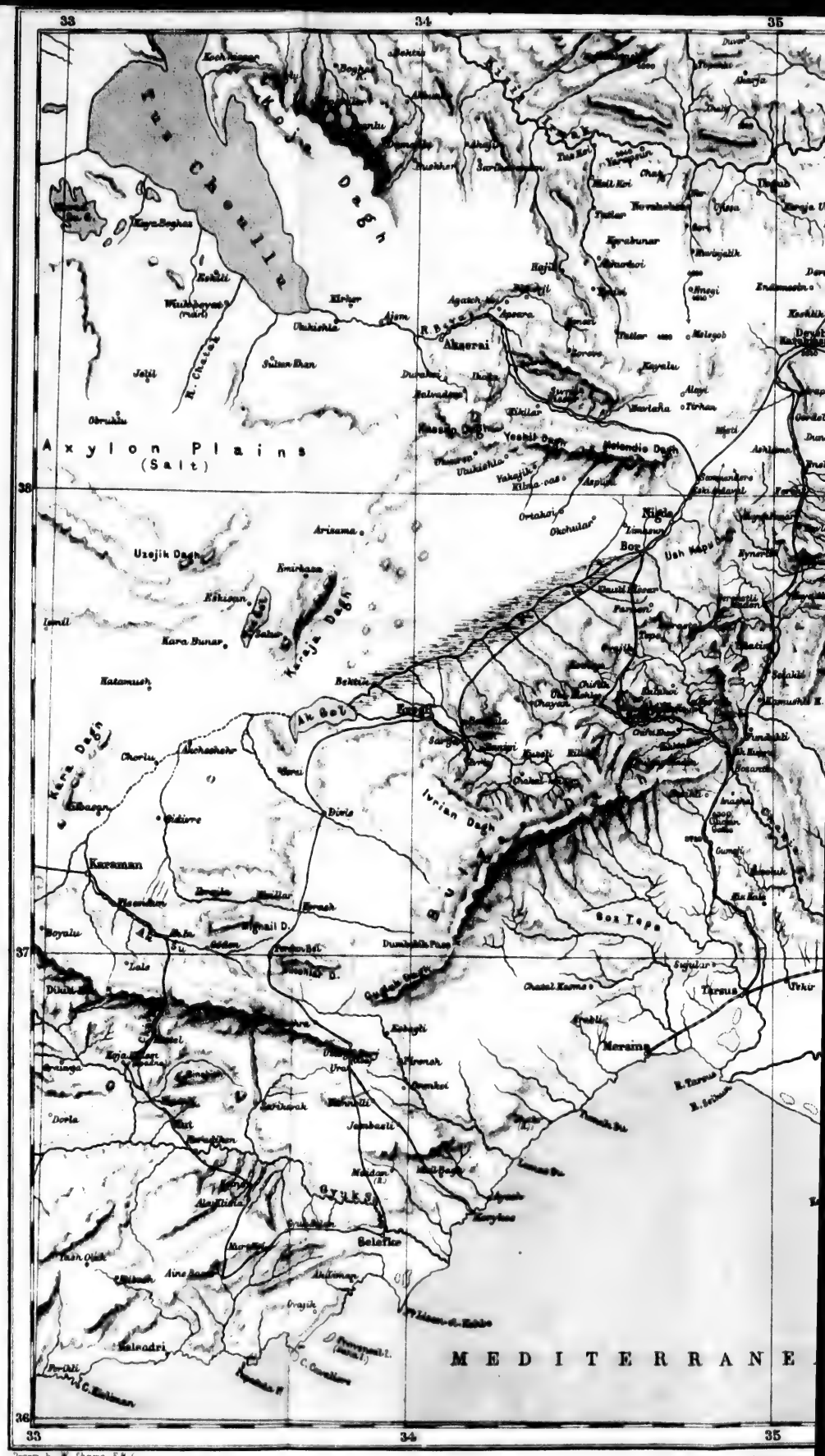
Turner & Shaw, 43 Brewer St. W.
Published by



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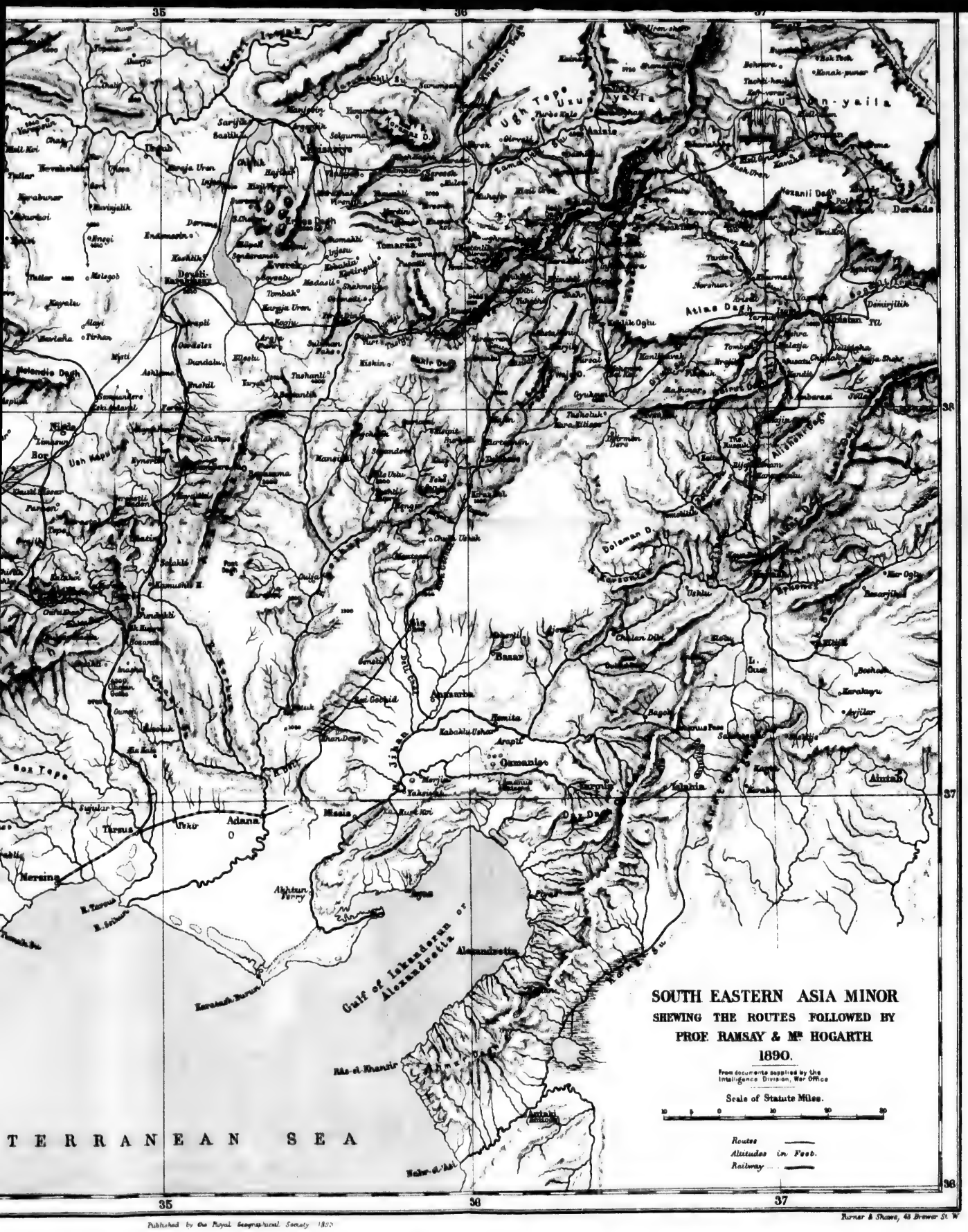
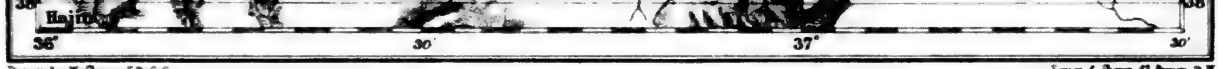

SOUTH EASTERN ASIA MINOR
SHEWING THE ROUTES FOLLOWED BY
PROF. RAMSAY & Mr. HOGARTH
1890.
From documents supplied by the Intelligence Division, War Office
Scale of Statute Miles.
Routes
Altitudes in Feet.
Railway
Gulf of Iskenderun or Alexandretta
Alexandretta
Adana
Tarsus
Mersina
Misis
Osmaniye
Kozan
Bozanti
Dorylaion
Eskishehir
Nicæa
Bor
Niğde
Kayseri
Sivas
Tokat
Amasia
Samsun
Trebizond
Erzerum
Erzingan
Mamuret el Aziz
Diarbekr
Mardin
Nisibin
Mosul
Aleppo
Antioch
Ras-el-Khanzir
Nahr-el-Asi
Nahr-el-Kebir
Ak-Dagh
Atlas Dagh
Alishan Dagh
Dolaman D.
Ak-Dagh
Bozkir
Ak-Dagh
Ak-Dagh
Ak-Dagh



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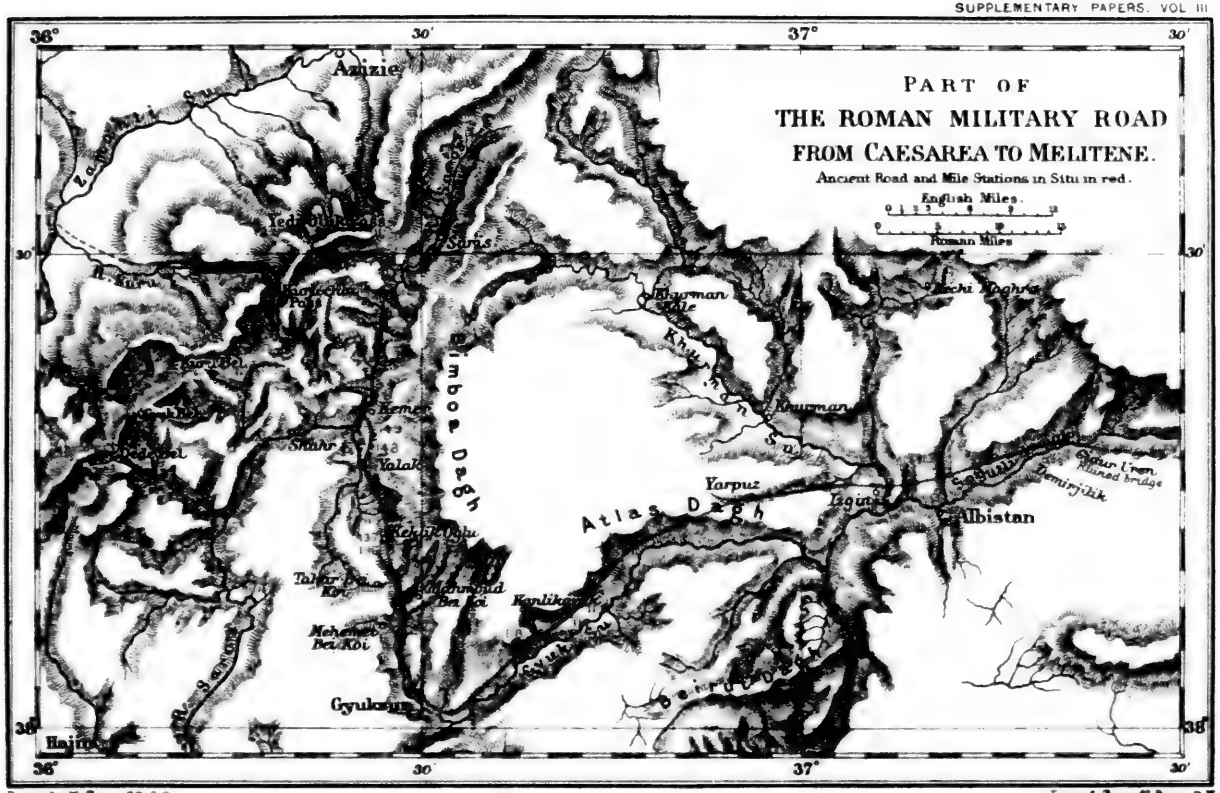

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ADADA,
Adana,
Adata,
Ahmed
Aine Ba
Ak Dere
Ak In,
Akkar I
Ak Lim
Ak Sera
Ak Su,
Ala Bu
Ala Dag
Alajaka
Ala Kli
Alama,
Albistan
677,
Almase
Almush
Amanic
Amasia
Ambara
Amisus,
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